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Families, technologies and consumption: the household and information and communication technologies

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CRICT DISCUSSION PAPER

Families, Technologies and Consumption: the household and information and communication technologies

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Introduction

The main aim of this paper is to present arguments and data derived from our on-going study of families and their technologies in such a way as to pose the problem of the relationship between social and technological change in the domestic and everyday world in new and hopefully suggestive ways. In doing so we attempt to locate our position in relation to a number of different literatures - on the family, on the relationship between the public and the private, on technology, and on consumption - in order to begin the process of fixing what we see as essential for an understanding of the particular problems presented by our empirical investigations. What is essential is the need to construct a framework sufficiently broad, yet sufficiently sensitive, to encompass the social, cultural and economic aspects of families, technologies and their relationships to the world of work and leisure. We have no expectation that we have, in this paper, succeeded in this overall ambition. Long as it is, there is much still to be considered, and much that will be modified both in the light of ongoing empirical work, and we hope, as a result of comments and discussions that the paper itself may encourage.

Our intention is to focus on what appear to us to be the main dimensions of a process which Frykman and Lofgren (1987) call 'culture building', that is the process by which individuals and families in neighbourhoods and in their private and public lives actively (but not necessarily consciously nor necessarily freely) construct in their daily routines what we want to call their moral economy. We want this notion of moral economy to refer to these families' own way of working with the social, economic

and technological opportunities which frame their world, and which depend on, contribute to and sometimes compromise, the ongoing structural forces for change which can be observed and analysed on a macro-sociological scale.

Both the elements in the term 'moral economy' are important. Every household is both an economic and a cultural unit. Each's respective material position sets profound limits on the opportunities available for consumption and self-expression, but within those limits and in important ways perhaps transcending them, households are able to define for themselves a private/public moral, emotional, evaluative and aesthetic environment - a pattern of life -on which they depend for their survival as much as on any economic security.

Increasingly, technologies - the brown and the white goods, the information and communication technologies - are implicated in this moral economy, both as material and symbolic objects. They are implicated both in issues of a family's efficiency and in issues of its status. But if we are to understand the present and future place of technologies, especially information and communication technologies, in the moral economy of the household, and perhaps also in the moral economy of the nation as a whole, then we need to understand how technologies become absorbed into and affect the patterning of family life. This understanding is in turn to be grounded in an understanding of the practices of everyday life as they present themselves, dynamically, in the daily lives of families and their members.

Our aim, in this paper, is also to initiate our contribution to the academic and policy debates around two major issues in modern society: the questions surrounding the future of the family, and the questions surrounding the role and impact of the new information and communication technologies in transforming society at large and the family in particular.

Public discourse, from governmental papers through business forecasting to popular journalism, abounds with images of the increasingly privatised family, shut off from public life, turned in on itself, within a culture of DIY home improvement and domestic leisure, and connected to the wider world only through the electronic forms of satellite/cable TV and tele-shopping (cf. Tomlinson, 1989). This is an image which has been articulated both to utopian and dystopian visions of various kinds. Moreover, the family itself is seen as being increasingly fragmented internally - in the words of the Henley Centre, the 'multi-active cellular family' whose home is a 'multi-purpose activity centre' for the increasingly separate lifestyles of the individuals within it (Tomlinson, op.cit). More home entertainment technologies are seen to indicate a trend towards increasing domestic isolation (Gunter and Svennevig, 1987, 86).

Much of this debate has been conducted within a framework which takes technology as, more or less, an independent variable, which is then seen to have 'effects' both on the family and on society at large. Thus the new technologies are widely seen as portending both the transformation of

relations within the family, and transforming the overall relations between the private and the public spheres as well.

Much of this debate has also been conducted within exclusively utilitarian views of technology and technological change. Such views, and the linking of the perceptions of such changes with perceptions of necessary and inevitable social change, have not led to the kind of predictive understandings that are often claimed for them (cf. Goldthorpe and Lockwood, 1968). If, in this paper, we appear to veer too far in the other direction - towards seeing technologies as symbolic - such a move must be understood in this context.

We are concerned with the domestication of technologies, with the process through which new technologies (of all kinds) are incorporated into the family and the household, and in that process acquire meanings of all kinds (and often of kinds that were not intended by their producers, eg. Minitel in France). It is in the notion (and the practices) of domestication that we think the two debates (about the future of the family, and the future/impact of technology) meet: in the sphere of domestic consumption about which we know so very little. Our study is engaged in exploring, empirically, this meeting. Our aim in this paper is to articulate, in a comparable way, the theoretical debates about the family and technology which, so far, have largely taken place in isolation.

In this paper, and in the study as a whole, we are principally concerned with matters of process, and with developing, from the base of

ethnographic work, a multi-dimensional analysis of culture and technology. Above all we are concerned with the analysis of the ways in which the social and the domestic dimensions of everyday life affect the manner in which people take up (or not) and use (in various ways) information and communication technologies.

The Centrality of the Family

For the purposes of this research the household and the family can be treated as coexistent[1]. Our subjects all live in nuclear families, though obviously with extended kin networks. The boundaries of the household and the boundaries of the family - the living, eating together, blood related group - at least at the level of daily interaction, coincide. The family is the social unit within domestic space. All our families occupy their own private space which is not shared, except on an ad hoc basis, by others. All our families, equally, have their own internal boundaries, boundaries which define the pattern of the relationships of those who comprise them.

This is as much, however, as they have in common. There is no such thing as the family - the normal family, the typical family. Families differ. They differ economically, and they differ as a result of differences of biography, personality and culture. Yet the family exists in our consciousness as something unitary, even sacred. It has an ideological significance even if its social significance is under threat. Indeed within modern society and under capitalism the family is still perceived as the cornerstone of the social order, and the home, the hearth, is the crucible in which the future society is created (Jowell, Witherspoon, Brook, 1987).

[1] The nuclear family comprised, in the 1981 Census, 32% of the total of all enumerated households. Married couples without children comprised a further 2%, and the next largest single category was the one person over retirement age household, with 15% Single parent families with dependent children comprise 4%.

Family life is, often, a struggle. Its members struggle to deal with the conflicting demands of the world beyond their front door and they struggle to maintain their relationships with each other. The family is the site and the source both of much of the conflict and many of the rituals that mark daily life. The security of the family lies in the taken for granted patterns deeply engrained in the practices of everyday life. Its capacity to deal with the challenges of the public world is a function of the resilience and the flexibility of those structured patterns. Without them and without their justification in the family's own ideology, its own myths, family life itself would be impossible to sustain.

To understand how a family lives with - consumes, uses, is affected by - information and communication technologies, it is essential to understand the family. It is essential to understand its many layers: as a social and as a cultural entity: as the site of its own internal, domestic, politics; as the elementary economic unit of modern society; as occupier of its own private space - the home - which is to be defended against, as well as integrated into, the public world of neighbourhood, work and the State. And it is equally essential to understand its dynamics, both the internal changes of its own development and the quality of its adjustments (or lack of them) to its changing economic, political, social and cultural environment. Information and communication technologies, indeed technologies of all kinds, find their places within different families according to their significance in what might be called the families' moral economy - their own way of working with the social, political and technological opportunities which frame their world, and which depend upon, contribute to and often compromise the ongoing structural forces for

change which can be observed on a macro-sociological scale.

Both the elements in the term moral economy are important. Every family is both an economic and a cultural unit. Each's respective material position sets significant limits on the opportunities available for consumption and self-expression, but within these limits and sometimes transcending them, families are able to define for themselves a private/public moral, emotional, evaluative and aesthetic environment - their own culture - on which they depend for their survival as much as on any economic security. The key to understanding the quality of a family's moral economy and the significance of information and communication technologies for it and within it, lies in understanding the family as an active site of social practices. It lies in the establishment of what specific factors in the wider social and cultural environment as well as what specific factors in the inner environment of the household produce an affect on their consumption and use. As Elizabeth Bott points out in her study of family networks, it is not sufficient simply to explain variation between families in terms of cultural or sub-cultural differences, one needs to push the analysis on:

> To say that people behave differently or have different expectations because they belong to different cultures amounts to no more than saying that they behave differently because they behave differently - or that cultures are different because they are different...In my view a culture is specific to a particular situation. (Bott, 1955, p.218/9)

It is interesting to note that even in studies of the impact of the mass media, and in particularly television, (where one might expect things to be quite different) it is only recently (eg. Lull, 1989) that such observations as these have begun to be taken seriously. The family, as

system and structure and as culturally and socially active, has remained almost invisible. In terms of its relationship with technologies, with the passable exception of recent studies on time use and the division of labour (Cowan, 1983 (1989); Gershuny, 1987; Pahl, 1984; Wallman, 1984), the family has also been little studied[2]. This seems a regrettable, if not an incomprehensible, omission.

The Family as System

We have already argued that individuals within families and families within the wider society have to be understood in terms of their inter-relationships. Such a position has also been taken by many family therapists (Gorrell-Barnes. 1985) who have explored the nature of family dynamics, both internally and externally, in terms of a framework provided by systems theory. Such a framework has a number of advantages for the present study. It enables observation and analysis to be focused on the dominant patterns of social interaction within the family, and on the ways in which families cope with internally and externally induced pressures for change. It also enables a concentration on the ways in which boundaries, again both internal to the family and around the family, are created, sustained and defended. And it enables, in particular, an understanding of the ways in which technologies are incorporated into the pattern of family interaction, either facilitating or constraining its functioning, and isolating or integrating individual family members from one another, or from the wider society (cf. Rogge and Jensen, 1988,

[2] We are ourselves are guilty, at least in this paper, of not pursuing these issues further. Our stress on the cultural aspects of the family has led us to neglect the economic aspects of the household. This is an omission which will be rectified in future work.

p.86-88).

Following Gill Gorrell-Barnes we can define a family system as:

> ...the patterning of intimate relationships organized over time. In the process of organization, certain behavioural sequences will be selected and conserved and others ruled out. Over time, the sequences within the pattern will be associated with perceptions, thoughts and feelings which constrain members of the family in different ways. The more that the group interact on a regular basis around certain repeated events, the more it is likely that systemic aspects of pattern influence their interrelationships. (Gorrell-Barnes, 1985, p.226)

Within the burden of this definition a number of points need to be made. The first is perhaps the obvious disclaimer: that the organic metaphor is not be taken too literally. Families are not organisms. What is at issue is the recognition of, and the need to explain, persistances of pattern in family relationships and their effect on the lives of individual members within and outside the family. Implicit in such a view are concerns, inevitably, with the family's equilibrium and stability, with boundary maintenance, with the significance of sub-systems within the family, and with potential and actual conflicts and instabilities within the family and between the family (and its members) and others.

One example of work within this field is provided by Salvador Minuchin (1974). He identifies three components to a view of the family as a system operating within specific social contexts. The first is of the family as a (more or less) open sociocultural system in transformation. The second is of the family undergoing continuous development, moving through a number of life-cycle stages that require restructuring. The third is of the family adapting to changed circumstances in order to

maintain continuity and enhance the psychosocial growth of each member. Families consist of different subsystems, for example the dyad of husband and wife, or mother and child. But each individual within the family may belong to different subsystems in which he or she has different levels of power and where he or she learns differentiated skills. Around each subsystem there are boundaries: rules defining who participates and how:

> The function of boundaries is to protect the differentiation of the system. Every family subsystem has specific functions and makes specific demands on its members; and the development of interpersonal skills achieved in these subsystems is predicated on the subsystems freedom from interference by other subsystems. For example, the capacity for complementary accomodation between spouses requires freedom from interference by in-laws and children, and sometimes by the extra-familial. The development of skills for negotiating with peers, learned among siblings, requires noninterference from parents. For proper family functioning, the boundaries of subsystems must be clear. (Minuchin, 1974, p.53-54)

Discounting the normative quality which inevitably accompanies any therapeutically focused theoretical approach, it is important to stress the significance of boundaries within and around families[3]. Boundaries can be clear or fuzzy, permeable or impermeable. Members of families and members of subsystems within families can become enmeshed or disengaged. Indeed most families have both enmeshed and disengaged subsystems and these will change through time. Boundaries can also be subject to dispute. They define the framework of the power relations within the family.

The work of Minuchin in particular and family systems therapy in general

[3] It is, of course, impossible to completely discount normative considerations, since normative considerations inform this, as any other, model. What we want to avoid however is any suggestion of 'family pathology' which is an inevitable concomitant of models of the family developed for therapeutic purposes.

provides an important route into the family, into its dynamics and into its functioning. As far as the place of information and communication is concerned, existing studies have already identified how television especially can be integrated into the internal dynamics of the family as well as acting as a mechanism of boundary definition for the the family as a whole (albeit for different family members at different times in different ways). What is now needed is an approach to the study of technology in the family which sees technology too as part of a system, not only in its own terms - as a techno-system - but also in terms of its incorporation within the encompassing system of family relationships.

There is yet another way in which the family systems approach can raise issues of importance to the study of the place of information and communication technologies in the family. This has to do with the significance attached to the ways in which the family constructs its own identity through its own accounts of its past and its present and its position in the world. Family myths (Byng-Hall, 1973, 1982) link, subjectively but powerfully, the histories of families with the rationalisations of the contemporary. Once again such notions as technological inheritance and technological career (see below) are ones that gain credibility and vitality from their incorporation into family mythology - a mythology which might, for example, condemn the women in the household to technological incompetence or a boy child to follow and identify with (or react against) his father's technological competence (cf. Rogge and Jensen, 1988, p.88; and for a dramatic example of this, see our discussion of Family A below). Equally, family myths may well incorporate material from family members' earlier involvement with the

content of the media or with once new technologies. In both cases the system as a whole (or particular individual claims on the system) are articulated and defended through the narratives of autobiography and memory.

The embedded family: family and culture

An understanding of the dimensions and dynamics of the family as a system and the place of technologies within that system is however only one step towards identifying what factors are likely to affect how information and communication technologies are integrated into the home. The techniques of family therapy, for all their sensitivity to the nuances of family life and for all their power in defining (at least potentially) a route for the assessment of key aspects of what they may identify as a family's pathology, nevertheless do not provide a sufficient basis for understanding families as social, cultural or economic units. None pay sufficient attention to the embedded quality of family life; they are in real sense sociologically colourless.

This is not the place to review the extensive literature on the sociology of the family in Western culture that has emerged over the last fifty years (for recent reviews see: Fletcher, 1962 (1973); Harris, 1969); Young and Wilmott (1973). Our concern is to focus on those studies which seem to offer a set of reference points for understanding the processes of families' involvement in the wider social environment particularly as they relate to their use of technologies. These studies are, broadly, of two kinds. The first concerns the relationship between family, culture and

society either in terms of the links between conjugal role relationships and the wider social network (Bott, 1957) or the dynamics and consequences of differential class based socialization on access to and competence within the educational system (Bernstein, 1971; Bourdieu, 1977a,; Bourdieu and Passeron, 1977). The second are those studies, principally within media studies, which focus on the dynamics within the family associated with media consumption, and in particular with television (see Lull, 1988; Journal of Family Issues, Vol.4. No.2. 1983).

Elizabeth Bott provides, above all, a methodology for enquiring into the close relationship between what goes on within a family and the immediate network of relationships outside. Her interest is in understanding the association between differential patterns of conjugal role relationships and the quality - the connectedness or disconnectedness - of social networks of the spouses outside the family. Her understanding of these associations is mediated by her concern with class, but also with other social variables including social and geographical position and mobility, social ecology, sub-culture and ethnicity, education, phase of individual and family development and the role of various reference groups (p.304). Her conclusion is that:

> Performance of familial roles depends on the personal needs and preferences of the members of the family in relation to the tasks they must perform, the immediate social environment in which they live, and the norms they adhere to. But the form of the immediate social environment and the norms of familial roles depend in turn on the personal needs and preferences of the members of the family in relation to a very complex combination of situational forces generated by the total social environment. The total social environment permits considerable choice among several potential arrangements of the immediate environment and of norms; the actual choices made by a particular family are

shaped not only by situational factors but also by the personal needs of its members. (Bott, 1957, 230)*

The significance in this conclusion is less in terms of its substance than in her willingness to allow for a kind of indeterminacy at the heart of the process which she is keen to unravel. This acknowledges the role of individual psychology without insisting on its priority. It recognises the importance of environmental factors without granting them a determinate status. Families are constrained by their history and by their social and geographical location in adopting particular patterns of action within the household and outside it, but the particular manner in which these various constraints are interpreted and acted upon can not be predicted or read off from them.

Basil Bernstein's position is somewhat different and he does not undertake in his research detailed investigations into the family life of his subjects as both Bott and we are doing. Nevertheless he too is concerned with the relationship between families and the wider social environment, though focusing his attention, as is well known, on the relationship between family culture (expressed principally through language), class and competence within an educational system and culture.

The importance of Bernstein's work for the present study lies in his

* Bott's privileging of individual preferences, here, needs to be treated with caution. As we suggest in the next paragraph it is precisely the indeterminacies of family culture which occupy us also, but not to the extent of denying ourselves the opportunity of seeing apparent preferences being themselves things to be questioned and further contextualised through social analysis.

attempts to define, through the analysis of the culture of the household - that is through the forms of communication within the family in language and in the definition of role systems and forms of control - a relationship between micro-social and macro-social processes. A close reading of his work (cf. Atkinson, 1985) suggests a much more open relationship between class position and domestic culture than is often ascribed to him, but it is nevertheless an essential part of his argument to establish that variations in family communication patterns are directly referable to social position, albeit neither in a simple nor a unilinear fashion (Atkinson, 1985, 74-75). The differences between restricted and elaborated codes, between personal and positional oriented family role systems and between the different modes of control (also expressed in terms of the difference between personal and positional orientation) define for Bernstein a way of conceptualising the moral order of the family in very similar ways to what we have already attempted in this section of the paper (Bernstein, 1971, 143-169). Indeed it is Bernstein's desire to theorise beyond the family and to attempt a definition of the necessarily interrelated dimensions of class, culture and social relations that marks his work as an advance on that of Bott.

As Atkinson points out in his recent discussion, what Bernstein is attempting to do is 'to account for the differential positioning of persons (subjects) within the division of labour. Such positioning is a function of power, and the coding of power is implicated in language. It is not only a matter of class: power pervades relations of ethnicity and gender as well.' (Atkinson, 1985, 101) It is also not only a matter of understanding a fixed set of relationships. Bernstein is at pains (eg

Bernstein, 1971, 186-187) to understand the forces for change within linguistic codes and competences in the changing division of labour and in the changing position of an individual family in the division of labour. He is equally keen to stress the importance of boundary maintenance within a family - the different ways in which the ordering of space, relationships and authority is organised both symbolically and in action.

He considers the difference between the two polar types of weak and strong boundary maintenance, for example, in the organisation of domestic space:

> Consider the lavatory. In one house the room is pristine, bare and sharp, containing only the necessities for which the room is dedicated. In another there is a picture on the wall, in the third there are books, in the fourth all surfaces are covered with curious postcards. We have a continuum from a room celebrating the purity of categories to one celebrating the mixture of categories, from strong to weak boundary maintenance. (Bernstein, 1971, 184; again cf. family A below)

Such differences are also expressed in the relationships between family members, and here his argument links closely with that of the systems theorists in family therapy. It also has, of course, at another level - that of its expression of structuralist ideas - strong links with the analyses of social and cultural reproduction developed by Pierre Bourdieu (1977a; 1977b), which we will not discuss fully here (but see below, pp.87ff).

We have dwelled on Bernstein's work for a number of reasons. The first is that it offers a way of linking the detailed analysis of the family therapist systems theories to the wider social environment by providing an account of the significant intervening variables. It is within the patterns of role definition and family communication that social position

and responses to social change are translated into the moral order of the family. More specifically, but also more importantly, however, is Bernstein's stress on the significance of boundary maintenance. Boundary maintenance is important as a key to understanding family culture both internally and also externally; both in the definition of social relationships and gender identities and also, symbolically, in the definition of family culture through the placing of objects, or the consumption of mass media or the use of technologies.

This is crucial. It is a dimension of the problem of the dynamics of the integration of families, their technologies and the wider social world . . which most of the studies of family use of television, the video or the computer have so far failed adequately to deal with, as we shall now suggest. These studies have tended either to take a single minded focus on the internal dynamics of the household to the exclusion of any concern with the mechanisms of the family's wider social engagement. Or they have taken an equivalently single minded but sweeping view of cultural difference without examining the mechanisms of a family's capacity to discriminate and convert cultural offerings according to its own moral economy.

James Lull in introducing a recent collection of studies of family television viewing in different cultures accurately defines the problem when he writes:

> Technological innovation, social relationships, and cultural identities...are intimately bound together. Advantages provided by work-saving devices and other technological advances are matched in importance by the social consequences of these developments, which must often be worked out interpersonally in the private

domain of the family home, activity that differs from culture to culture. (Lull, 1988, 12)

But few studies, including those that follow in his collection, are able to take on the questions that are begged in this statement. In particular they fail to offer any account which effectively deals with the dynamics of the process, or with the relationship between social and cultural differences in the position of families and their capacity to consume the technologies and media produced within contemporary cultures.

Lull's earlier ethnographic work on family television viewing in the United States prematurely forecloses analysis with a neo-Bernsteinian dichotomy of family relationships (he distinguishes between socio-oriented and concept-oriented families). Apart from the internal contradictions suggested by this dichotomy (Morley, 1986), the account of the differences between families of either type is sociologically suspended so that there is no opportunity of relating family style to wider culture or to examine the basis for, the dynamics of, or even the variations between these family cultures.

The other problem, of course, which we will come to again, is the that of isolating television watching (or video or computer use, cf. Lindlof, 1989) from the activities associated with other technologies and from other activities inside and outside the household. Even such important dimensions as differential gender use of, and control over, information and communication technologies can not be understood in isolation from the dynamics of gender role and identity within the family as whole. So, even though recent studies of media use (for recent reviews of the literature on television see Morley, 1986: on computer and VCR see Lindlof, 1989)

have attempted to take seriously its embedded nature in the family, particularly with regard to the relationship between broadcasting and the management of time (Bryce, 1987, Scannell, 1988), between the use of television and gender relations (Morley, 1986), and on television and the quality of family interaction (Brody and Stoneman, 1983), the literature is as yet underdeveloped above all because it has yet to take into sufficient account the embedded nature of television and computer use[5].

Thomas Lindlof concludes his recent (1989) review of the literature on computer and video use in the family with a number of pertinent observations which reinforce our own arguments thus far and provide a basis both for the conceptual framework which we hope will emerge in this paper and for the empirical work which is associated with it.

The first is the acknowledgement that the use of information and communication technologies is not confined to the household: '..specific ways of organising social action and ideas about the uses of those media overlap the bounds of the household...the new media involve people in many other ways than just their family roles.' (53) The home may be the heart of, and the hearth for, media use but it has to be understood as the centre of a potentially endless number of social networks involving its different members in social and cultural activities outside the home with reflexive effects back on the family. In our own preliminary work there are sufficient examples of this to make it increasingly self evident, both in terms of links with sub-cultural or hobbyist cultures (Family A, below)

[5] For a discussion of what we mean by 'embedding' see Morley and Silverstone (1990, in press) and Silverstone (1989, in press).

or with kin networks that are themselves powerfully mediated and sustained by technologies (Family B).

The second is the observation, already substantially laboured in this paper, that the identification of the systems and structures of family life as a whole are a prerequisite for any sufficient understanding of domestic media and technology use: 'A systems metaphor, which emphasises the relationships (including causal models) of functional interpersonal communication patterns as both antecedents or mediators of new media usage, could address such questions as what family-related variables affect child socialization to microcomputers and VCRs.' (55)

The third is a concern with the family as a communicative environment in which such questions as the nature of family decision making in relation to the problems associated with media use, the quality of family morality insofar as it involves symbolic and 'non-rational' aspects of media use, and the relationship between gender and technology use in the home, all become material if the complexities of family culture and media use are to be understood.

We have no significant dissent with this agenda. On the contrary. This paper is an attempt to provide a basis for a sytematic pursuit of just these issues. The study is an attempt to explore them empirically.

Emerging out of our work with families are a number of related concepts which bear centrally on the relationship between family structure and family ideology - the family's moral economy - and their use of

technology. Each will be discussed in later sections of this paper. At this point however it makes sense to sketch them out, especially since they are centrally implicated in our understanding of the various aspects of family system and process.

Within a family's encompassing moral economy we can distinguish the specific dimension of a family's technological culture. Technological culture refers to the set of values and activities that define a family's systematic relationship to the technologies within its own domestic environment and to those technologies which in one way or another impinge on that environment. To define technological culture in this way, as we shall argue below, is to place technology as artefact in a dependent position in relation to a family's moral economy. Technologies become meaningful domestically insofar as they have meanings placed upon them within the family during the course of its daily interaction with them. It also requires that a family's relationship to each technology must be understood in terms of its relationship to all its technologies. Given the systemic nature of family life (never mind the systemic nature of technology) it makes no sense to consider each technology on its own. Finally the concept of the family's technological culture requires that the family's relationship to technology be itself understood within the context of the family's place in the wider culture, particularly as this is defined and expressed though the various networks (Douglas and Isherwood, 1978) that link each family to the public world of work and leisure.

From the point of view of the internal dynamics of family life we can

operationalise the concept of technological culture by focusing on interrelated dimensions of its expression within family life. Thes

a. technological inheritance

b. technological career

c. technological competence.

Technological inheritance, a notion that owes much to Bourdieu's discussion of cultural capital (Bourdieu, 1977a, Bourdieu and Passe 1977), refers to the set of attitudes and skills that each member o family receives as a result of his or her socialisation into the fa origin. It is through technological inheritance that technological culture within a family is reproduced. And it is though an analysi technological inheritance that the specificities of a family's relationship to technology can be understood across time and betwee generations. The concept of technological inheritance is particula important for an understanding of the relationship between technolc gender. The concept of technological inheritance can be applied bo the family as a unit and to individual members within the family.

Technological career refers to the set of attitudes and skills that e member of the family develops during the course of his or her lifet It is through a technological career that an individual adjusts to, develops, his or her relationship to changing technological opportu or demands. An individual's technological career will be defined r by those opportunities but by his or her inheritance and by the qua the family's moral economy. It will also obviously be affected by experiences in the wider culture and society, particularly in the w work.

Technological competence refers to the set of attitudes and skills that each member of the family (or indeed the family as a whole) mobilises in relation to each and all the technologies available within the domestic and extra-domestic environment. Competence is related to performance (cf. Hymes, 1972). Levels of competence can be distinguished. Within the present study a distinction between competence as a consumer of technology and competence as user of technology will be made, though both the notions of consumption and use beg important questions which require both empirical and theoretical clarification.

The final operationalising concept that we want to introduce is a crucial one for understanding the relationship between the family's technological culture and the wider environment of work and technological opportunity. This will be considered in more detail in the next section when we discuss the relationship between the public and the private, but needs identification here because it bears centrally on the actions of the family as a social and cultural entity in its relationship to technology. It is the notion of domestication.

Domestication is a 'matter of subordinating objects to ends of one's own and thus to one's subjectivity' (Strathern, 1987; Hirsch, 1989). The domestication of technology refers to the family's capacity to incorporate and control technological artefacts into its own technological culture, to render them more or less 'invisible' within the daily routines of family life. A family's capacity to domesticate technology will of course depend not just on its own resources - material as well as practical and cultural

- but on the potential inscribed within each technology through its marketing and in its design. As Daniel Miller suggests:

> All...objects...are the direct product of commercial concerns and industrial processes. Taken together they appear to imply that in certain circumstances segments of the population are able to appropriate such industrial objects and utilize them in the creation of their own image. In other cases, people are forced to live in and through the images held of them by a different and dominant section of the population. The possibilities of recontextualisation may vary for any given object according to its historical power or for one particular individual according to his or her changing social environement. (Miller, 1987, 175).

Domestication does, perhaps almost literally, involve bringing objects in from the wild, from the public spaces of shops, arcades and working environments. It is the final stage in the process of consumption but it is not guaranteed in the act of purchase (cf. Murdock, et al. nd. on the computer).

But domestication, as Strathern argues, (cf. Hirsch, 1989) also concerns the subjectivities of those involved, for the identity of both the individual and the family as a whole, their senses of self, is fundamentally implicated in the process of incorporating and taming technologies as they cross the threshold of the household. Some technologies may be more easily domesticated than others. Some may have more significance for a family than others. Some may resist. Some may be transformed in the process. All will have to find a place within the family's own system of relationships and values, within the family's moral economy, if they are to have any meaning, any usefulness or any impact.

It is at this point that we would like to turn our attention to the wider

problem of the relationship between the public and the private, a relationship which defines the ground upon which a family and its members attempt to create their own senses of themselves and their own relationships to technology.

The public and the private

1. Anthropological and historical perspectives

In attempting to develop our analysis of the domestic functions of communications and information technologies we have taken as one of our starting points - Bourdieu's (1972) analysis of the Berber house, in which he offers an exemplary model for the analysis of the articulation of public and private space, and for the articulation of domestic technologies within gender relations. While that analysis is, of course, culturally specific and clearly pertains to a pre-industrial rural society, we would wish to argue that a number of Bourdieu's insights remain pertinent to the analysis of these issues as they appear in urban and industrial societies.

In that analysis, Bourdieu formulates the relation between the domestic and the public as an 'opposition between female space and male space, on the one hand; the privacy of all that is intimate, on the other, the open space of social relations ...' (101) Bourdieu argues that the orientation of the house is fundamentally defined from the outside, from the point of view of the masculine, public sphere - as the 'place from which men come out' ( ), so that the house is 'an empire within an empire, but one which always remains subordinate' ( ).

Our argument is that, despite subsequent social and economic developments, in contemporary industrial societies the division between public and private remains fundamentally articulated to gender relations. Thus Gamaranikov and Purvis (1983) note that the private realm

continues to be viewed as somehow outside the boundaries of the social, equated not only with the feminine, but also with the 'natural'. Similarly, Fontaine observes that, in our own modes of social organisation, we retain a fundamental opposition between the public and private spheres, in which: "the former is (understood as) the realm of law and consists of the institutions of the state and the national economy, the latter is (seen as) the sphere of personal affection and moral duty" where there is a 'well established association of woman with domestic life and men with the public world of competition and power.' (Fontaine, 1988, 268; cf Ardener, 1981).

In his historical analysis Zaretsky (1976) traces the process through which, as he puts it, with the transformation of the family from a productive unit to a unit of consumption '... capitalist development gave rise to the idea of the family as a separate realm from the economy, (and) created a 'separate' sphere of personal life, seemingly divorced from the mode of production.' As a result of this development, Zaretsky argues 'The family became the major sphere of society in which the individual could be foremost - within it, a new sphere of social activity began to take shape: personal life.' (p.61)

In his analysis of contemporary patterns of consumption Tomlinson (forthcoming, 1989) addresses the cultural and ideological dimensions of what he argues to be the increasing centrality of the home - and associated concerns with home-ownership and 'home improvements' - within contemporary British society. He notes the familiar finding that for most people 80% of leisure time is spent in the home (cf. Glyptis, 1987) and

further notes the growth of consumer expenditure on (and in) the home.

For Tomlinson the central concern is with the development of the home as an autonomous or (increasingly) self-sufficient and self contained consumer unit. He argues that what we see here is a continuing process of privatisation, as home-based consumption represents a retreat from the public realm of community, and the private individual retreats into the confines of his (or her) house and garden. (cf. Docherty et al (1987) on the shift from cinema to television as the primary mode of film consumption).

Tomlinson argues that this represents not just a shift in patterns of consumption but also a crucial ideological shift in the cultural meaning of the home. The home has become increasingly the site for 'an unprecedentedly privatised and atomised leisure and consumer lifestyle.' (1989, 10) For Tomlinson, the key shift is one in which 'as the home fills up with leisure equipment servicing the needs of dispersed household members, it moves towards a new function. The Puritan notion of the home was as a Little Kingdom. The Victorian concept stressed Home as Haven (cf. Everyday Television - DM/RS). The late modern Elizabethan concept constructs the Home as Personalised Marketplace. It is where most of us express our consumer power, our cultural tastes ...' (Tomlinson, 1989, 10).

Certainly we would agree (see our comments above) with Tomlinson in giving a central place to processes of domestic consumption. However Tomlinson articulates this analysis of the centrality of the home in contemporary

culture to a somewhat one-sided vision of the cultural significance of this growth in 'privatised' consumption. In this sense he appears to offer a contemporary version of the 'embourgeoisement' thesis which is prey to many of the shortcomings noted originally by Goldthorpe and Lockwood (1967).

For us the central point concerns the articulations of a set of parallel oppositions - not only public:private, but also masculine:feminine; not only production:consumption but also work:leisure. Our analysis of the domestic uses of communications and information technologies must be integrated with an analysis of the shifting relations between these terms - and indeed must be concerned with the function of those technologies themselves in creating the possibility of such shifts. If we are to avoid the problematic 'naturalisation' of the domestic (and its assumed connections both to femininity, consumption and leisure) we must analyse its historical construction. In this connection King (1980), building on Thompson's (1967) work on the regulation of time in the development of industrial capitalism, offers an insightful analysis of the historical emergence both of leisure times ('the weekend') and leisure places (the home, the holiday cottage - 'a horizontal container for the consumption of surplus free time' (King, 1980).

King's own analysis is principally concerned with class, and the differential development of free time for members of different classes. We should like to extend that analysis by also considering the question of gender and the differential relations of men and women to 'leisure' both as a temporal phenomenon ('after work', 'the weekend') and as a spatial

phenomenon (as sited routinely in the home or other places).

Brunsdon and Morley (1978) argue that while the domestic sphere is also a sphere of domestic labour (the reproduction of labour power) it has come to be defined centrally as the social space within which 'individuality' can be expressed - the refuge from the material constraints and pressures of the outside world, the last repository of the 'human values' which are otherwise crushed by the pressures of 'modern life'. The central point, it is argued (see Brunsdon and Morley, 1978, 78) is that the workings of this private sphere cannot effectively be understood without attention to the specific role of women and their central place in the domestic.[1]

However, the point is not simply an historical one - rather we see here an ideological construction of social domains and gender relations which retains a strong contemporary relevance - in so far as both the household itself and women's domestic labour within it continue to be conceived as the unchanging 'natural' backcloth to the real world of activity in the public sphere.

The further point is, of course, that men and women are positioned in fundamentally different ways within the domestic sphere. If, for men, the home is fundamentally a site of leisure and recuperation from work; for women, whether or not they also work outside the house, it is also a site of work and responsibility. As the overall social location of 'leisure'

[1] As is noted in that analysis, the women and the home seem, in fact, to become each others' attributes, as evinced, among others, by Ruskin: 'wherever a true wife comes, this home is always round her'. (quoted in Brunsdon and Morley, 1978, 78)

moves increasingly into the home, the contradictions experienced by women in this sphere are correspondingly heightened. (cf. here Cowan, 1984 (1989))

At the same time, we would argue that it is also necessary to pay attention to the ways in which the private space of domestic life is socially constructed and articulated with political life. Historically Zaretsky notes that "the early bourgeoisie understood the family to be the basic unit of the social order - 'a little church, a little state' and the lowest rung in the ladder of social authority. They conceived of society as composed not of individuals but of families ..." (Zaretsky, 1976, 42) In a similar vein, Fontaine observes that in contemporary industrial societies "households are also units in the political and economic organisation of society; as such they are part of the public domain. A legal address is an expressed attribute of a citizen." (1988, 284) Thus, while the household enjoys privacy, which implies the right to exclude (unless the police have a warrant) and to enjoy autonomy of action, that "privacy is as much a matter of social definition as the effect of thick walls." (1988, 280)

Moreover as Donzelot (1979) argues the family does not have a unique or unambiguous status. For certain (e.g. juridical) purposes, it is private; while for others it is public. It is the site of intervention for various state welfare agencies, whose intervention to regulate child-rearing practices within the family, for example, is legitimated by reference to the state's concern with the 'proper' upbringing of future members of the national labour force. (See Hodges and Hussain, 1979). For Donzelot the family is not simply a private institution but also the point of

intersection of a whole range of medical, judicial, educational and psychiatric practices - it is by no means a wholly private realm, somehow 'outside' (or indeed, setting the limits of) the social. In this sense the family is neither totally separate from nor opposed to the state, rather the 'private' itself is a (legally, juridically) constructed space, into which the state and other agencies can intervene, and whose very 'privacy' is itself constituted and ultimately guaranteed by these institutions. This is not to suggest that the 'freedoms' of the domestic space are somewhow illusory, or ultimately reducible to their place within a history of regulation and power, in the way which Donzelot himself at times seems to do. Rather it is to suggest that the latter perspective is a useful (and necessary) corrective to any analysis of domestic processes which remains blind to the history and social construction of that space.

We have indicated our interest in the incorporation of communications technologies within pre-existing social domains, and in particular, their incorporation within differential gender domains. However, we must also be attentive to the particular role of communications technologies in the construction, and reconstruction of these domains. Haralovich (1988) offers a fascinating account of the role of the suburban family 'situation comedy' on American television in the 1950's in 'the construction and distribution of social knowledge about the place of women' (1988, 39). She is concerned to analyse the interlinkages between factors such as the roles of television representations of lifestyle, governmental economic and housing policies and the consumer product industries in defining both the norms for a particular model of a 'healthy' lifestyle (a single family

detached suburban home in a stable, non-urban environment) and in defining women's place within that domain as a 'homemaker'. In this Haralovich's argument can be seen to represent a good instance of the application of an analysis which is concerned with the 'double articulation' of communications media which we have argued below (see pp.60ff; see also the comments in Family B (below) on the television set - as both a desirable object in itself and as a source of information on the possibilites of further consumption).

Her argument is precisely that television representations, in this respect, worked in close parallel to the material supports of housing policies - which were concerned to organise the interior space of the home so as to reinforce the gender-specific socialising functions of the family. Thus, she notes, in America in the 1950's 'the two national priorities of the post-war period - removing women from the paid labour force and building more housing - were conflated and tied to an architecture of home and neighbourhood that celebrates a mid-19th Century ideal of separate spheres from women and men ...' (1988, 43).

Thus we are returned to some of the concerns which our earlier discussion of Bourdieu was designed to indicate. Certainly not all contemporary TV sit-coms are like the ones that Haralovich analyses (we have the 'divorce' sit-com, the 'single parent' sit-com) but the nuclear family continues to play a central role in television discourses - which in turn, we would argue, continue to function to construct and circulate 'social knowledge' about the appropriate forms of gender relations and about the articulation of the domestic and the public spheres.

2. Communications technologies in the domestic sphere

In this section we shall focus principally on communications technologies (and, in particular, on broadcasting technologies) given the key role which they can be seen to play in articulating the spatial and temporal relations between the private and public spheres, (see Morley and Silverstone, 1990, in press). Our argument is that it is necessary to contextualise the development of communications technologies within the broader historical frame of the changing relations between public and private domains in contemporary culture, and to 'denaturalise' the now taken-for-granted and unobtrusive presence of various communications technologies within the domestic space of the household.

Moores (1988) offers an account of the troubled history of the introduction of radio into the home and argues that while radio was gradually accommodated into the 'living room' - that space in the house designated to the unity of the family group - this accommodation was by no means unproblematic (cf. Boddy, 1986, on initial anxieties as to whether the 'living room' was the appropriate location for the television set). As Moores' points out, radio's entry to the living room was 'marked by a disturbance of everyday lives and family relationships' (1988, 26). Indeed the initial enthusiasm for the medium came largely from young, technically-minded men - who were fascinated by the machine as a technology - and it was often resisted by women, for whom the unattractive mechanical appearance of the early sets (and their tendency to leak battery acid onto the furniture) combined with the fact that their husbands dominated their use, meant that, for many women, radio was at

first an unattractive medium. ("Only one of us could listen and that was my husband [using the earphones - DM/RS]. The rest of us were sat like mummies." Respondent quoted in Moores, 1988, 29).

Thus, as Moores notes, radio signified something quite different for men and for women. For men, the 'wireless' was a 'craze', a 'miraculous toy' (cf. Gray (1987) on video recorders as 'women's work and boy's toys'); for women, it was, Moores argues, 'an ugly box and an imposed silence', (Moores, 1988, 30-1) as reception was so poor that anyone talking in the room made it difficult for the listener to follow the broadcast. It was only much later, with the development of loudspeakers to replace individual headphones, and the design of a new generation of radio sets marketed as fashionable objects of domestic furnishing, that radio gained its taken for granted place within the geography of the house.[2]

By extension, we would want to argue that similar processes can be seen in the contemporary entry of new communications technologies (e.g. video and computers) into the home - and that, again, their entry is likely to be marked by their differential incorporation into masculine and feminine domains of activity within the home.

The work of Boddy (1986), Spigel (1986) and Haralovich (1988) offer a useful model for the analysis of the development and marketing of contemporary 'new technologies'. In a close parallel to Moores' analysis,

[2] Though, of course its place in the sitting room has now largely been taken by the television set, with the radio(s) now banished to the kitchen or the bedroom, in most houses, for personal rather than collective use; an example of the 'career' of a technology in a parallel sense to that proposed by Appadurai, (19)

Spigel (1986) offers an account of the problematic nature of the introduction of domestic television in America in the early 1950's. She is concerned primarily with the role of women's magazines in presenting 'the idea of television and its place in the home' (1986, 3) to their female readers - who were of course, in their economic capacity, the key target group who would-be TV advertisers wished to reach and, in their social (gender defined) role, the group seen to be responsible for the organisation of the domestic sphere into which television was to be integrated.

Spigel argues that in the early 1950's television was seen as potentially 'disrupting' the internal arrangements of the home (just as radio had been perceived in the earlier period) - disrupting patterns of child rearing and marital relations, distracting housewives from the proper running of their homes, and necessitating a thorough going rearrangement of the moral economy of the household. Indeed, from the industry's point of view, problems were foreseen as to whether TV, as a visual as well as an auditory medium (and thus, it was presumed, one which would require of its housewife-viewers a degree of attention incompatible with the performance of their domestic tasks) could, in fact, be integrated into the daily patterns of domestic life. The introduction of TV into the home did not take place as the easy, unruffled insertion of a new technology into the existing socio-cultural framework, not least because of concern that women would not be able to cope with the technological complexities of retuning the TV set from one station to another (cf. recent debates about whether women can 'cope' with video and computing technologies).

The industry's primary response was to offer other products as solutions to the problems which television was seen to create: thus a wide variety of household appliances were marketed as 'solutions' to the dilemmas posed by the TV set. The crucial problem (from the advertiser's determining point of view) was how to bring the housewife into the unified space of the televiewing family. As Spigel notes, the electric dishwasher was marketed precisely as a 'technological' solution to this problem - as it would 'bring the housewife out of the kitchen and into the living room, where she could watch TV with her family' (Spigel, 1986, 8).

We wish to argue that our analyses must focus both on how communications and information technologies came to be enmeshed in, and articulated with, the internal dynamics of the organisation of domestic space (and particularly with reference to gender domains) but also that it must be situated within a broader analysis of what Donzelot (1979) has described as 'the withdrawal to interior space'. This is a process in which communications technologies themselves have played a key role in recreating, in contemporary terms, 'the pleasures of the hearth' (Frith, 1983), as their domestication has increased the attractiveness of the home as a site for leisure.

In analysing all of these process we would want to insist on the extent to which the pre-existing social modes of organisation of the home have exerted a determining effect on how communications and informations technologies have been incorporated (domesticated) into everyday life. However, there are other dimensions to these processes. At the same time, we need to be sensitive both to the various modes in which regulatory

discourses have entered the domestic sphere and affected the development of these technologies (cf. current debates about censorship and scheduling policies in broadcasting; anxieties about the moral dimension of some of BT's new domestic phone services; concern over domestic video and audio tape 'pirating', etc.) In all of these areas we must also pay close attention to the effects of the dominant images of the (nuclear) family and its 'healthy' functioning held by producers and merketers - and to the determining effect of these images on the policies of powerful institutions. However, it is not only a question of the determing effects of domestic organisation on the development of technology and of the impact of images of the domestic held by policy makers.

3. Technologies of communication and the construction of time-based public identities

In analysing the role of communications and information technologies in articulating the public and private sphere we must attend not only to their spatial, but also to their temporal dimensions. Of course, these two dimensions themselves can themselves be transposed by these very technologies. Thus as Giddens notes (1979) the telephone recaptures the immediacy of interaction across spatial distance. Similarly, de Sola Pool notes that 'the telephone seems to have effects in diametrically opposite directions ... (it) invades our privacy with its ring, but it protects our privacy by allowing us to transact affairs from the fastness of our homes.' (1987, 4). However, beyond this capacity, many of those technologies are themselves heavily enmeshed in the structuring of social time. King argues that the development of both physical and symbolic technologies of communication has played a vital role in the

standardisation of time in industrial societies - bringing public (metropolitan) time into what were previously the differential rhythms of local and domestic modes of temporal organisation. In a similar vein, Scannell (1988) has analysed the role of broadcast communications technologies in the 'socialisation of the private sphere' and the significance of broadcasting's role in the domestication of standard national time. Scannell's key point concerns the role of communications technologies (especially in the form of national broadcasting systems) in organising (both at a calendrical and at a quotidian level) the participation of the population in the public spheres of national life (whether through the 'occasional' viewing of a royal wedding or the regular domestic ritual of 'watching the news' as a structuring activity in the daily cycle of life in the home (cf. Nordenstreng, 1972). As Scannell notes, modern mass democratic politics has its forum in the radically new kind of public sphere that broadcasting constitutes.

Cardiff and Scannell (1987), in their historical analysis of the development of British broadcasting, focus on broadcasting's crucial role in forging a link between the dispersed and disparate listeners and the symbolic heartland of national life, and its role in promoting a sense of communal identity within its audience whether at both regional and national levels.[3] As Cardiff and Scannell note, the audience has always been seen as composed of family units - as 'a vast cluster of families rather than in terms of social classes or different taste

[3] Historically, the BBC, for example, can be seen to have been centrally concerned to supply 'its isolated listeners with a sense of the community they had lost, translated from a local to a national and even a global level.' (Cardiff and Scannell, 1987,)

publics.' (   ).

Brunsdon and Morley (1978) argue that the central image of much contemporary current affairs and 'magazine' programming is precisely the family - and the nation as composed of families. In this type of broadcasting the nuclear family is the unspoken premise of much programme discourse: not only is the programming addressed to a 'family audience' but this domestic focus accounts both for the content ('human interest stories') and the mode of presentation (the emphasis on the everyday aspects of public issues. What is assumed to unite the audience is the experience of domestic life: as a 'nation of families'. Broadcasting does much more than simply to make available experiences (the Cup Final, the Proms, etc.) which were previously only available to those who could be physically present. Beyond this the 'magic carpet' of broadcasting technologies plays a fundamental role in promoting national unity at a symbolic level, linking individuals and their families to the 'centre' of national life, offering the audience an image of itself and of the nation as a knowable community - a wider, public world beyond the routines of a narrow existence, to which these technologies give symbolic access.

In a similar vein, in his analysis of the development of radio light entertainment, Frith observes that radio did more than simply to make public events accessible by bringing them into the home - more importantly 'what was on offer was access to a community ... what was (and is) enjoyable is the sense that you too can become significant by turning on a switch' (1983, 121-2). And thus, while domestic listening (or viewing) might be 'a very peculiar form of public participation' (121) it offers,

above all else, a sense of participation in a (domesticated) national community[4]. However as Frith notes, the pleasures on offer were (and indeed are still) principally of a particular kind: the 'quiet leisure' of broadcasting offers centrally "the pleasures of the hearth" ( ) - pleasures of 'ordinariness' and 'familiarity' a 'community of the catch phrase' constructed around the central images of hearth and mother, interior space, family pleasure and domestic life (see Moores, 1988, p.34).

We must also, of course, pay close attention to the effect of broadcast schedules on the organisation of domestic leisure time and the complex modes of interfacing between public and private modes of temporal organisation (cf. Bryce, 1987). Our central point concerns the ontological significance, for the viewing audience of, modes of viewing the motivation of which, as Reith notes, is not so much '... 'I see', but 'I also will have seen ... a formation of the collectivity around a shared visual perception ... (where) ... the spectator can feel part of this imaginary totality' (Rath, 1988, 37). here we approach another dimension of the articulation of public private spheres: This time, as between the nation and the family (or individual) viewing in their sitting room. In this connection Hartley has argued that 'television is one of the prime sites upon which a given nation is constructed for its members' (1987, 124), drawing on Anderson's concept of the nation as an 'imagined

[4] However as Frith notes, the pleasures on offer were principally of a particular kind: the 'quiet leisure' of broadcasting offers centrally 'the pleasures of the hearth' - pleasures of 'ordinariness' and 'familiarity' a 'community of the catch phrase' constructed around the central images of hearth and mother, interior space, family pleasure and domestic life. (cf. Moores, 1988, 34)

community', the construct of particular discourses (Anderson, 1983). The point lies in the central role of broadcast media schedules in regulating a simultaneity of experience for their dispersed audiences, and thus in providing them with a temporal authentication of their existence as members of a synchronised national community. As Bausinger (1984) also notes, a variety of communications technologies can be seen to function precisely as articulating or 'linking' mechanisms between the rituals of the domestic or 'private' sphere and the construction of memberships of national (and other 'public') communities.

4. Technologies, Boundaries and Domestication

It has been argued above that communications technologies play a crucial role in articulating the public and private spheres - thus the role of broadcasting in articulating the family and the nation into the 'national family'. In so far as, in contemporary Western societies the home and family are considered to be a private shelter from public pressures, television and other communications technologies (e.g. the telephone) are problematic in so far as they disrupt this separation of spheres. Similarly, technological developments such as the video and the telephone answering machine can both be seen as technical means for enhancing the family's (or individual's) ability to regulate the transgression of their domestic boundaries. In the case of the video this works by enhancing the consumer's ability to manipulate broadcast schedules (by time-shift recording) so as to fit in more conveniently with domestic routines, and in the case of the telephone answering machine by enhancing the users ability to 'screen out' unwanted 'interruptions' into their domestic space.

However, these technologies are also problematic: their vary capacity to break (and thus potentially transgress) the boundaries of the family mean that they have always been seen as being in need of careful regulation. The Broadcasting Standards Council is merely the latest manifestation of this long standing concern with the danger of broadcasters transgressing standards of 'taste' and 'decency' in the most problematic sphere - inside the home.

Moreover, new technologies themselves create new anxieties and calls for regulation. Thus, as Paterson (1987) argues, the development of home video technologies quickly came to be seen as intensely problematic. The capacity of video to offer individual family members (and particularly children - witness the scare about 'video nasties') an increased freedom to view 'uncertificated' material became the justification for a whole new round of State interventions designed to regulate this field of activity.

Certainly developments such as the proliferation of communications channels, cable and satellite networks offer the prospect of the fragmentation of the national audiences (and politics) which traditional broadcasting systems have created: the development of minitiarised and portable 'delivery systems'; the further prospect of individualised consumption within the home ('a double privatisation'). Gunter and Svennevig (1987), as we have already noted, raise the question of whether we might be seeing the beginnings of a 'trend towards the increased acquisition of...sets and accessory equipment (eg. video recorders, home

computers) with every family member having access to a personal home entertainment system which they can use privately, resulting in increased isolation of family members from each other.' (86)

Lindlof and Meyer (1987) push the point further, arguing that the 'interactive' capacities of recent technological developments fundamentally transform the position of the consumer. As they put it:

> ...with increasing adoption of technological add-ons for the basic media delivery systems, the messages can be edited, deleted, rescheduled or skipped past with complete disregard for their original form. The received notion of the mass communications audience has simply little relevance for the reality of mediated communication. (2)

However many of these arguments run the danger of abstracting these technologies' intrinsic 'capacities' fromthe social contexts of their actual use (cf. Hymes (1972) critique of Chomsky for a parallel argument). In understanding such technological developments, we would follow Bausinger in his concern with the question of how these technologies are integrated into the structure and routines of domestic life - into what he calls 'the specific semantics of the everyday'. His basic thesis is that technologies are increasingly 'absorbed' into the everyday ("everyone owns a number of machines, and has directly to handle technical products") so that everyday routines themselves are constructed around technologies which then become effectively 'invisible' in their domestication (cf. our own findings: below pp.65ff). The end result, he argues is the "inconspicuous omnipresence of the technical." (Bausinger, 1984, 346). For us the key point is to understand the processes through which communications and information technologies are 'domesticated' to

the point where they become inconspicuous, if not 'invisible' within the home. The further point is then to focus on the culturally constructed meanings of these technologies, as they are 'produced' through located practices of consumption.

Technology and Culture

It will be clear by now that when we talk of technology we are not simply talking of artefacts. It will also be clear that when we talk of the relationships between technology and everyday life we are not talking of effects or impacts. Of course technologies are artefactual. Of course technologies have effects. But as Mackenzie and Wacjman (1985) point out technologies are social - produced socially, consumed socially; they are socially constructed. The term technology refers to objects, practices and meanings. Domestic technologies are no exception. The issue is to understand how they are defined socially in the various contexts in which they are found, in which they gain acceptance (or are rejected): to understand both the consistencies and the varieties of the 'constituting practices' (the daily, often taken for granted, but essentially skilled knowledges and competences in relation to the design, production, marketing, consumption and use of artefacts, which we might wish to call techne[1]) which cohere around and focus upon an artefact and socially shape it (MacKenzie and Wacjman, op.cit.).

In this section of the paper we wish to consider some of the approaches that are available for a consideration of domestic technologies as social and cultural, and to begin tentatively to offer our own. The aim, of course, is the one we began with in this paper: a coherent approach for the understanding of information and communication technologies in the

[1] Martin Heidegger talks of techne as poeisis - as 'bringing forth': '...techne is the name not only for the activities and skills of the craftsman, but also for the arts of the mind and the fine arts. Techne belongs to bringing forth, to poiesis; it is something poietic (sic)' (19**, 13). We are grateful to Teri Walker for pointing this out.

home and in the family. Inevitably, given the limitations of space and time, the task will in this paper remain incomplete. What follows is a sketch only.

As a starting point we will take some of the arguments in a brief but highly suggestive paper written by Alfred Gell, called Technology and Magic (1988). Gell begins his discussion with a similar definition of technology to the one we have already offered:

> At the very minimum technology not only consists of the artefacts which are employed as tools, but also includes the sum total of the kinds of knowledge which make possible the invention, making and use of tools...Technology, in the widest sense, is those forms of social relationships which make it socially necessary to produce, distribute and consume goods and services using 'technical' processes. (1988, 6)

Gell goes on to ask what the term 'technical' means, and this leads him into the substance of his paper, an exploration of the particularity of human inventiveness and capabilities:

> Technical means are roundabout means of securing some desired result...Highly 'technical' processes combine many elements, artefacts, skills, rules of procedure, in an elaborate sequence of purposes or sub-goals, each of which must be attained in due order before the final result can be achieved. It is this elaborate structure of intervening steps, the steps which enable one to obtain result X, in order to obtain Y, in order to (finally) obtain Z, which constitute technology as a 'system'. (1988, 6)

Within this very broad definition of technology Gell distinguishes three different kinds of technical systems: technologies of production (technology as conventionally understood), technologies of reproduction (for example kinship systems) and technologies of enchantment ('all those technical strategies, especially art, music, dances, rhetoric, gifts, whch human being employ to secure the acquiescence of other people in their

intentions or projects' (1988, 7). In focusing on the third he wishes to explore the relationship between technology and magic. Both technology and magic act as the elaborated intermediaries between intention and the fulfillment of projects; both from this point of view, are symbolic.

Magic consists of 'a symbolic 'commentary' on technical strategies in production, reproduction, and psychological manipulation'. (1988, 8) Magic is like play. It sets ultimately unrealisable goals which nevertheless are sought through the manipulation of the substance of reality. Technology and magic are therefore closely interlinked. There are many examples to support this contention, from the spells cast by Trobriand gardeners to our own mystical relationship to black boxes and our technological utopias. These magical utopias drive innovation: magic provides the image of 'costless' production which technology strives to achieve. But equally the relationship between magic and technology is sustained in our culture, in an other sphere: through advertising:

> ...just as magical thinking provides the spur to technological development, so also advertising, by inserting commodities in a mythologised universe, in which all kinds of possibilities are open, provides the inspiration for the invention of new consumer items. (1988, 9)

In a world of technology both magic and advertising flatter to deceive.

Gell's reductive ellision of technology, art and magic (and life) comes perilously close to tautology. Nevertheless his argument is an important one, for the following reasons, and much of what we have already suggested in this paper, we hope, has prepared us for it. The first is that technology is to be understood as systemic: technology is a technical system: and a technical system is a social and a cultural system as well

as a system of material components: it is a system of rules, patterns, relationships and objectives embodying both knowledges and desires. The second follows from this. It is that technology is to be understood as a set of culturally embedded practices - embedded in the culture of the producing organisation as much as in the culture of the consuming one; embedded also, of course, in the culture of the market and of marketing. And the third follows again. Technology is symbolic as well as material. Technologies are meaningful. They gain their meaning, socially, historically, from the ways in which they are used, the ways in which they are, both literally and metaphorically, constructed in production, marketing and consumption (cf Marvin, 1988). In this sense technologies are semiotic. They are textual, requiring to be written, in production and marketing, and rewritten (or read) in consumption. Technologies thus have to be understood as embedded, too, in a set of discourses, in a set of socially defined ways of expressing and understanding the world, in which they are inscribed and on which they also leave their mark.

It is in these various senses that we wish to understand technology in general and information and communication, and domestic, technologies in particular. But before exploring more precisely some of the implications of doing this, we must examine, albeit briefly, an other view of technology. This offers both an important and a necessary balance to a view of technology as symbolic.

Frank Webster and Kevin Robins in a number of papers and in their recent book argue for a 'political economy' of technology which stresses (as against their understanding of the arguments of, for example, Nicholas

Garnham (1983)) the term political.

They refuse the polarisation in the debates around the significance of information and communication technologies between economic analysis and what they call the 'politics of representation'. Instead, they take a position which insists on the mutual implication of technological change and social and political restructuring:

> If the combined, though disaggregated, forces of multinational corporations and political interests succeed in the systematic introduction of these new technologies - from robotics and data banks to cable television and personal computers -and, particularly, in laying an integrated national electronic grid (the 'wired society'), then social life will be transformed in almost all aspects. (Robins and Webster, 1987)

The 'if' is a very minimal 'if'. Robins and Webster have very few doubts about the the irresistable direction of change. Information and communication technologies are, in Robins and Webster's view, literally, the deus ex machina in capitalism's increasingly successful efforts to sustain its control both of industrial production and of the very 'rhythms, patterns, pace, texture and disciplines of everyday life' (1987, 4). Within an argument which once again (like Gell's) shades perilously close to reductionism and tautology (the significance of post-Fordist capitalism is defined by reference to the existence of the new technologies: the significance of the new technologies is defined by reference to post-Fordism) it is not always clear what they see as technologies' precise role in capitalism's relentless drive for

domination[2]. The new technologies offer a political escape route out of capitalism's present crisis, certainly, but is this route as clearly defined, as irresistable and as unilinear as Robins and Webster (even in their pessimism) suggest?

The plausibility of their argument about technology depends entirely on the plausibility of their argument about political economy, and as many commentators have noted (eg. Lyon, 1988), this is not entirely convincing. Their insistence on a class based model, as well as on only focusing on capitalism, has led them, at least in this paper, to neglect factors such as gender, region, cultural difference, and most importantly, the possibilities and realities of resistance and cultural transformation. The dynamics of the political as they are offered here are not explored in their contradictions, though the agenda for so doing has been powerfully defined.

Technology, however, is a political category as well as a social and a cultural (and an economic) one and there is no doubting the force of Robins and Webster's arguments which require any understanding of its place in modern society to be firmly grounded in an understanding of a society's political economy. In our society this requires a grasp of technologies' embedding within the market and within capitalism, as we will argue in our discussion of consumption. And it also requires

[2] In a discussion of the centrality of the notion of everyday life they say, for example:'...far from being socially neutral, information technologies are beginning to shape the whole way of life and assume a profound cultural significance. The category of 'everyday life'...can help us see the pervasive and intrusive nature of the 'information revolution'. For it points to the ways in which the rhythm, texture and experience of social life...are being transformed and informed by capital.' (38)

something other than a passive view of consumption. But it also requires a more sensitive understanding of the processes of that embedding and of the particular factors which mediate power and technology in the world of everyday life, which for present purposes, means the household and the family.

Robins and Webster indeed see the principle impact of new technology in a post-Fordist political economy as being on the domestic sphere, particularly insofar as it affects both the relationship between home and work and the intensity of personal surveillance. New technologies, they suggest, are about control. The increasing intensity of consumerism and of the extension of the State's control over civil society indicate a 'significant new stage in the strategy of relative mobilisation - one in which technological domination becomes extensively and systematically used in spheres far beyond the work-place' (1987,). Even their qualification that these forces are 'tendencies' and subject to challenge, does not seem substantially to affect their dystopian vision. But these are propositions which can be empirically tested. Once they begin to be, then other questions will emerge alongside the political ones, questions which will may well soften the lines of their argument and which will should, in some significant ways, transform it. One line of transformation which is already emerging in the literature is that of the idea of technology's 'dual affects' (de Sola Pool, 1977) or 'double life' (Keen, 1988). Another is that of technology's 'self-referentiality' (Haddon, 1988). All of these characterisations refer, in their different ways, to the complex and contradictory character of technologies, and above all to their relative openness, to their polysemy, in the contexts which they are used

(as well, of course, as in production and marketing).

It is to these issues and to some of the implications of seeing technology as a symbolic as well as a political good that we would now like to turn. In so doing we return to the agenda set by our opening discussion: of technology as culture; of the culture of technology.

Let us begin with de Sola Pool's (1977) argument in relation to the telephone - the most invisible (see below) of domestic technologies. The telephone's impacts, he suggests, are puzzling, evasive and difficult to pin down. The telephone adds to human freedom but people will use that freedom differently. The phone can be both a liberation and an intrusion, as we know:

> Rather than constraining action in any direction, the telephone is an agent of effective action in any direction...(this) implies that the study of the telephone's social impact belongs to the important and subtle class of problems in the social sciences which demands a logic more complex than that of simple causality - a logic that allows for purposive bahaviour as an element in the analysis. (de Sola Pool, 1977, 4)

Despite the fact that de Sola Pool frames his understanding within the terms of a model of technological impact, his point is an important one, for it privileges user freedom, not just to define the utility of the telephone but to define and refine its meaning. Such definition and redefinition, of course, must focus, as far as the consumer is concerned, on the construction of the technology in the market place, in the campaigns and advertisements of its public image. It is the first stage of an approach to technology which indicates the importance of understanding the indeterminacy at the heart of the relationship between technological and social change.

Ben Keen offers a similar approach in his study (1988) of the development of the video-recorder. He traces the starts and false starts in the development of the VCR. Here was a communication technology designed originally for commercial use (Ampex) and then for the household (Sony, JVC). Inbuilt into the design and marketing of the home video was a model of the household and an 'inscription' within the technology and the advertising of a set of potential uses. The key to the success of the technology as whole, and of the VCR (as against disc based machines, for example), despite the original intention that the consumer would be a passive purchaser of pre-recorded, pre-packaged software, was the consumer's ability to take control. The consumer was empowered:

> The time-shift emphasis of Sony's technology and other similar designs appeared as a threat to many within the established interests of the film and television industries. Arguably it marked a shift in the balance of power towards the consumer. (Keen, 1988, 35)

Quoting David Noble, Keen sees this freedom as creating this particular technology's 'double life':

> ...close inspection of technological development reveals that technology leads a double life, one which conforms to the intentions of designers and interests of power and another which contradicts them - proceeding behind the backs of architects to yield unintended consequences and unanticipated possibilities. (Noble, 1984, quoted in Keen, 1988, 9)

But video recorders are not the only technologies which have a double life, and the indeterminacies surrounding the consumption of technologies can be characteised in other ways too.

Leslie Haddon (1988) offers one illustration of how this might be done in his study of the emergence of the home computer in Britain during the

eighties. What seems to distinguish the British experience was the particular technological character of the early Sinclairs and their adoption by, among others, the hobbyist culture (who were indeed a key component of Sinclair's marketing strategy). The ZX80 was bought as (and to some extent marketed as) a 'self- referential' machine:

> ...the appeal of these Sinclair machines was ultimately not that they provided uses and benefits. The appeal was substantially the same as the hobbyist one. You bought the machine for itself, to explore it, rather than for what it could do...What is unusual about the Sinclair home computers [as opposed, for example, to the calculator, RS/DM] is their virtual lack of any practical uses or benefits, apart from being self-referential and symbolizing the new computer revolution. (Haddon, 1988, 28-29)

There are two different points that can be made here. The first, which Haddon himself emphasises is that the absence of any function other than one which could be described as 'learning about computing', was the consequence of a technological inadequacy. The computer could not, technologically, sustain anything else: and the marketing succeeded in making this a virtue. The second point, to some extent is the obverse of this, and it is made by David Skinner (1989). It is in many ways more telling. Skinner argues that self-referentiality is also a quality of the more sophisticated computers (for example BBCs) in British domestic life. The implication here, of course, is that self-referentiality is as much a product of the culture surrounding computing as it is a result of the particularities of a given item of technology (cf. Dutton, Rogers, Jun, 1987, 243).

Our discussion of the social and cultural character of technology has raised a number of points and it seems appropriate to review them briefly here before pursuing in a little more detail some of their implications.

The first is that technology is a social and a cultural system, embedded in and constructed through rules, patterns, relationships, objectives and meanings in production, marketing and consumption of objects. The second is that technology is necessarily implicated in the dynamics of power and control in modern society. Information and communication technologies are a central component of the political economy of the modern state, and domestic technologies are no exception to this. The thirdly is that there is a profound indeterminacy in the innovation process around consumption and use, an indeterminacy which has been identified but barely studied (Lindlof, 1989; Dutton, Kovaric, Steinfield, 1985).

If we pursue these ideas into the household, and focus both on the significance of domestic technologies generally and information and communication technologies in particular, the key requirement at this stage seems to be an understanding of the process and dynamics of these technologies' incorporation into family life and the consequences of that incorporation. We have already discusssed the dynamics of the family we will go on to discuss and the dynamics of consumption, and provide some framing concepts for the identification of these two dimensions of these processes. We would like to do the same here for technology, and offer a number of ways of conceptualising domestic (and plausibly other) technologies as cultural systems, of technologies as culture-bound.

Technologies, if they are to be used, have to have meaning. Those meanings come with the technologies: or perhaps more precisely they come as possible or preferred readings and they are bought with the object.

And those meanings are subsequently refined or transformed (or misread) in use. The ways in which the meanings around (and of) technologies are constructed in use also feed back into the meanings constructed in marketing and in production. The market provides the framework for this loop, and market research and marketing its momentum. The meaningful use of technologies is bound up with ideas and feelings which quickly outrun utility. In buying a technology - a machine, an artefact - we are also buying into an ideology, a utopian future often (as well as an ideology of the present), in such a way that the subsequent management of that technology, be it a television, a computer or an answerphone is constituted by a sense of its appropriateness (its 'real' meaning, its 'proper' uses) (cf. Skinner, 1989). Objects find their places within the multiple and overlapping discourses of family life, and we have indicated something of the complexity of these as they affect not just the internal system of the household but also the relationship between the public and the private sphere; or they have no place at all. One such discourse is around domestic space. Another around gender. Another around power. Yet a fourth around the socialisation of children. A fifth concerns ideas of play, leisure and work. And still another focuses on individual and collective identity. If technologies in any way are to 'fit' into a family's culture and not - like a rejected transplant - remain unabsorbed, then the reasons for that must be found in and around its meaning or meanings for the family as whole and for individuals within that

family[3]. Presumably this point is now well taken.

If we pursue this line a little further we find it relatively easy to think of technologies as texts: 'connotative system(s)...defined by (their) autonomy and closure ' (Ducrot and Todorov, 1981). Technologies are inscriptions. They come with sets of instructions, and those instructions are also designed into the machine. Increasingly information and communication technologies also come with declared opportunities for interactivity - for writing as well as reading. But technologies come inscribed more deeply as well, for their textuality is not simply oriented towards utility, but to such things as status, style, user competence. When Gell talks of advertising as magic, and technology and magic as synonymous, he is referring to this aspect of technology in our culture.

The textual metaphor is important also for another reason, however. And that is the need to recognize that the production of technology is like writing or speaking, a bid for attention and for closure. A machine is constructed to claim an audience, a user, a function, in an already complex environment of communication and practice. To receive technology, to buy a machine and to use it, is not simply to receive, or to read or hear it, but it is equally not simply to reconstruct it as if it were a <u>tabula rasa</u>. These freedoms are limited and the possibilities are constrained. Technologies differ, in other words, in the degrees of their

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[3] In this connection, and in the next section of the paper, we discuss the particulars of this fit as it relates to gender, by drawing on the work of Baines (1989) and Bush (1983) who discuss technologies' 'valences': 'the tendency (of a particular technological system, or tool) to interact in similar situations in identifiable and predictable ways...to 'fit' in with certain social norms...and to disturb others'. See below p.72. See also our discussion of the rhetoric of technology later in this section.

textual closure or openness.

If we pursue this argument one step on, we arrive at the question of the mechanisms of technologies' meaningfulness. How are we to understand and define the textuality of technology? Much of the relevant argument here has already been rehearsed in our discussion of consumption. Technologies are commodities that become objects as they are appropriated into domestic culture. In that appropriation private and public discourses meet and they are made meaningful (Miller, 1987). But this is not perhaps so simple or so monochromatic a process, particularly in the case of information and communication technologies, which are, we want to suggest, doubly articulated.

Information and communication technologies are distinguishable, relatively if not absolutely, by their double articulation into public and private discourses. This notion of double articulation is derived from models of language, especially from the work of André Martinet (1969), who understood the unique capacity of natural language to convey complex meanings to be the result of the articulation of both its phonemic and morphological levels. Sounds (without meaning) were a precondition for words or signs (with meaning). The meaningfulness of natural language is made possible through, and requires, both.

The meanings of all technologies are articulated through the practices and discourses of their production, marketing and use. The internal structures of technologies, their images constructed through advertising, and the final incorporation of such things as refrigerators, hair driers

and power drills into domestic cultures are of a piece: what is being negotiated is the meaning of the commodity as object. Information and communication technologies, however, carry a second set of meanings, and to some significant extent these meanings are dependent on the first. Information and communication technologies are media. Just as the first are the subject of negotiation through appropriation, so these are. Television programmes, computer software, telephone conversations are the 'natural language' of information technologies. And they only become possible through the prior appropriation of the media themselves. We have already referred to a particular example of this double articulation, in discussing how the television is both sold as a domestic machine, defining the family and its place within it through its marketing, and itself being the means, through its own ads and its soap operas, of providing images of family life (Haralovich, 1988; see also our discussion of Family B, where the television is both bought as an object for its 'style' and is the means for the maintenance of the family's culture of consumption). Marshall McLuhan had some sense of this when he talked of the medium as the message, but he misunderstood both the dual character of information and communication technologies and the social and cultural character of their doubly articulated messages.

What we are suggesting here is that the cultural value of such a machine as a television or a computer or a telephone lies both in its meaning as an object - embedded as it is in the public discourses of modern capitalism, but whose meanings are still open to negotiation in the private discourses of the household (Miller, 1987) - and it also lies in its content, the programmes, the software, the conversations - which are

of course similarly embedded (Morley and Silverstone, 1990, in press). The consumption of both, the technology as text and the texts themselves (as technologies), define the meaning of information and communication technologies, as objects and as discourses. It is in this sense that they are doubly articulated.

We have suggested the outline of an approach to technology which we see as a logical conclusion to our concern with understanding its significance in the culture of the family and the household. One final element needs to be put into place.

Many sociologists and critics of contemporary culture have seen it as a rhetorical culture (Barthes, (1977); Brown, (1987); de Certeau, (1984)) and seen mass communication in general and advertising in particular as its central component, providing the rhetorical currency of everyday life. Insofar as technology is produced, marketed, bought and used within that culture, then, as we have consistently argued, technology is firmly implicated in its rhetoric. The rhetoric of technology consists, obviously in its marketing - in the marketing of technology as an idea, a promise, a panacea, as well as in the marketing of technologies as machines. Technology is constructed in the market place through the figures and tropes of hoardings, television ads and all kinds of public display.

But the rhetoric of technology also consists in the design of the machine-commodity itself, in the construction of its textuality and in the claims it makes on the user-reader in its design. Both functional claims

and appearence are rhetorical. The differences between a telephone with a dial and one with a series of buttons, or an analogue and a digital watch, are rhetorical (as well as technical) differences. They are rhetorical because they mobilise the commonplaces of technical and aesthetic languages to make diffferent statements to, and above all different claims on, the potential consumer and user. Each specific artefact has a rhetorical significance in its claims for its own uniqueness, both functionally and aesthetically. All these claims aim for closure, that is they aim for clarity and unambiguity both in the specification of function: machines are designed to be used in particular ways and these have to be constructed within the machine itself in order to appeal to a particular set of potential and actual users with their own knowledge and discourses. The notion of 'user-friendliness' in the design of new technologies is pre-eminently a rhetorical strategy, for in developing it engineers must construct machines that meet, inter-discursively, the culture and expectations of their target audiences (and indeed through this also to shape them), both to persuade them to buy but also to persuade them to use their technologies efficiently or correctly or whatever. As Pinch and Bijker (1984, 426/7) point out:

> Closure in technology involves the stabilization of an artefact and the 'disappearence' of problems. To close a technological 'controversy' the problems need not be solved in the common sense of that word. The key point is whether the relevant social groups see the problem as being solved. In technology advertising can play an important role in shaping the meaning which a social group gives to an artefact.

But rhetoric is not just a matter of 'false' closure. It is a matter of definition and persuasion, and it defines and persuades through its ability to construct texts (in both literal and metaphorical senses) as appealing and coherent in accordance with the established commonplaces

(Billig, 1987) of contemporary culture. Rhetoric is the 'art of persuasion'. But it is also the art of classification (McKeon, 1987). How are we persuaded to buy, to use and to understand our technologies? The answers lie in the detailed analysis of the texts of technologies and in the understanding of the ways in which they construct their appeals, but they also lie in an understanding of the intentions[4] of those who do the construction (because rhetoric is nothing if not highly motivated) as well as in an understanding of their success.

If seeing technology as rhetorical encourages us to examine the appeals and the claims of technology within culture, and the mechansims of those appeals and claims, then it also requires us to consider the issue of the responses to them. Here the rhetoric of technology enters another discourse: the discourse of everyday life and the discourse of the domestic.

With this observation we have returned full circle, to the family, to the household and to the culture of everyday life. Of course this too is a rhetorical culture (de Certeau, 1984; Lakoff and Johnson, 1980; Silverstone, 1989) and technology, as we have argued, is constructed once again within the narratives and through the metaphors of daily conversation. The rhetoric of everyday life is in Michel de Certeau's terms, 'tactical rhetoric': the rhetoric of negotiation, subversion and consumption. Through the use, the display and the incorporation of the

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[4] Of course intention is an entirely problematic notion, given the burden of our argument and the emphasis we give to the social. However the posing of the question of the rhetoric of technology in the way that we are doing here requires us to think of the construction of technology as a process of the negotiattion and renegotiation of meaning. The intention of those who initiate that process can not be left entirely out of account.

significance of technologies into family and daily life we speak about the world. The arrangement and visibility of technologies in domestic space, their decoration, the ways in which they are mobilised in the construction of an individual's or a family's identity, the claims of ownership, competence and membership in a wider culture or sub-culture, all of these ways in which technologies can be made meaningful, all of these tactics of representation are rhetorical. They are rhetorical insofar as they are part of our continuous efforts to use our objects to speak about the world, to mobilise the possibilities that technologies (both singly and doubly articulated) offer for the construction of meaning and for our ability to define and persuade each other of our social and cultural competence.

Many domestic technologies are rhetorically invisible, though in different ways to different people, in different settings, at different times. The refrigerator, the telephone are so taken for granted, often, so unnoticed, so familiar in daily use, that they become rhetorically inert. They become the technological commonplaces of daily life. Yet the decision to replace an old machine with a new one, or the decision to buy a new technology, a computer, an answerphone, or a CD player, such events bring to the fore technology as rhetoric, as families negotiate and justify and then display in private or in public (or in both) their understanding of the public meanings of technologies and their ability to incorporate and transform those meanings into their own. Such work is rhetorical because it depends for its success on the mobilisation of the figures and tropes - the metaphors, the ironies - through which we organise our daily lives. At a general level technologies provide many of those metaphors: the

terminology of cybernetics and computing is an obvious example. But equally daily life provides the metaphors through and by which we domesticate technologies. Our cultural activities are therefore rhetorical in terms of the dynamics of the relationships - the formal processes of homology, identification, amplification, suppression (Morley and Silverstone, 1990, in press) - through which we, in our everyday lives and within our households, relate to, and reconstruct, the dominant public cultures of technologies and marketing.

We have provided in this section some indication of the ways in which we think technology can be considered (and must be considered) as cultural. What we have not done is to give some indication of how the dominant lines of cleavage in social life define a particular cultural value to technology. It is to one of these - gender -that we now turn.

Technology and Gender

Throughout this paper we have argued for a contextual understanding of the use and function of technologies, as they are incorporated both within the social organisation of the relations between the public and private spheres and within the domestic sphere itself. This is also to focus, initially, on questions of 'how' rather than 'why' in relation to domestic technologies. To transpose Lindlof and Traudt's argument (1983), it is also to say that the central theoretical and policy questions concerning the significance of 'new technologies' in the home cannot be satisfactorily framed, let alone answered, until a number of prerequisite questions concerning what the use of such technologies entails, for all family members, have been posed and investigated. In the first instance, this may lead us towards seemingly elementary considerations - such as the determining effect of the structure and size of the domestic space available to different families - which, in our view, have been improperly neglected by researchers in this field to date. Thus, for example, it may be important to research the extent to which, for members of higher density families with more restricted physical environments, the aural barriers afforded by the consumption of various communications media (from the television to the walkman) may function as a way of creating personal 'space' in lieu of physical spatial privacy.

However the domestic is not simply a physical space - it is also a socially organised space. Just as we argued earlier, following Bourdieu, that the public/private divide is closely articulated with gender

relations, so again following Bourdieu's lead, we turn to the significance of the gendered organisation of domestic space within the private sphere - as a fundamental determinant of the take up and use of different technologies by family members[1].

There is, of course, now a vast body of literature concerned with the function of gender as a fundamental principle of social and cultural organisation which it would be beyond the scope of this paper to attempt to review. We shall take only two central points from that literature. The first is that one of the key concerns in this field has been the seeming invisibility of women and their activities in traditional sociology. The second (and related) point is that made by McRobbie and Garber in their analysis of girls' subcultures. They argue that this 'invisibility' (within the public spheres of life on which sociological analysis has traditionally concentrated) is itself structurally generated by women's particular positioning in the domestic. Thus, they argue: 'If women are marginal to the...cultures of work...it is because they are central and pivotal to a subordinate area, which mirrors, but in a complementary and subordinate way, the dominant masculine areas. They are marginal to work because they are central to the subordinate, complementary sphere of the family.' (McRobbie and Garber, 1976, 211).

That 'centrality', we would argue, is of great consequence in determining differential relations to domestic communications technologies for men and

[1] As Bourdieu puts it: 'The opposition which is set up between the external world and the house only takes on its full meaning...if one of the terms of this relation, the house, is itself seen as being divided according to the same [gendered, RS/DM] principles which oppose it to the other term.' (Bourdieu, 1971, 104)

women. We will begin by briefly exemplifying this argument by reference to the significance of gender in organising the domestic uses of one particular technology, in this case television, as that is one area in which these arguments have already been well developed. Hobson's work on housewives' television viewing habits demonstrates that, for the women she studied, their sense of their home as a site of continuing domestic work and responsibilities leads to a quite distinctive form of consumption of television - in which viewing is, in the main, a fundamentally distracted and interrupted activity for them. At its simplest, this suggests that men and women's differential positions in the domestic sphere - as, fundamentally, a site of leisure for the one but, more contradictorily, a site of both leisure and work for the other - determines their differential relation to television.

Similarly Morley's (1986) analysis of viewing patterns in working class London households reveals the structuring effect of gender relations. In those families gender was consistently associated (again) with distinctive viewing patterns, amounts and styles of viewing and with distinctive programme preferences. Moreover, power and control over programme choice was itself seen to be a matter of gender relations, as was the ability to sit and watch a chosen programme without feelings of 'guilt'.

In that analysis Morley argues that the 'gendering' of technologies is most apparent in relation to video and that, on the whole, videos are seen (like automatic control devices) as principally the possessions of fathers and sons, occasionally of daughters, but least often of mothers. In a similar vein Rogge and Jensen (1988) refer to the world of the 'new media'

as principally a masculine domain. As Lull (1988) notes, the 'masculinisation' of the VCR:

> ...is a logical extension of the masculine roles of installing and operating home equipment. They are the family members who develop user competency. Many new technologies are 'toys' for men [cf. Moores (1988) quoted earlier on radio] and they enjoy playing with them. So, the responsibility becomes a kind of male pleasure. The operation of this equipment ... is a function that men are expected to perform for their families. The responsibilities, pleasures and functions that men have with these pieces of equipment gives them some degree of control over them and over other family members along the way. (Lull, 1988, 28-9).

In her analysis of the use of home videos, Gray begins by noting that the differential cultural positioning of men and women in the domestic sphere is relatively independent of (and resistant to) actual economic transformations (such as male unemployment or women going out to work). Regardless of such developments the domestic is still largely seen as the sphere of 'women's work', and this, Gray argues, strongly informs gender based views of 'new technologies' such as video. Thus she follows both Cockburn (1985) in suggesting that new technologies have tended to reproduce traditional work patterns across gender, and Zimmerman (1981) in arguing that 'old ideas' have largely become encoded in new technologies. From Gray's perspective, the use of all domestic technologies must be understood as being incorporated within the social organisation of gender domains. The main structuring principle, she argues is that technologies that are 'used for one off jobs with a highly visible end product (e.g. electric drill, saw, sander)' are understood as masculine while those 'used in the execution of day to day chores with an end product which is often immediately consumed (e.g. cooker, washing machine, iron)' (Gray,

1986, p.5) are understood as feminine.

The use (or non-use) of technologies is, as she argues, no simple matter of 'technological complexity'. As she notes, while the women she studied did not use their domestic videos (or did not use particular functions such as the time-controls), relying instead on male partners or children, they routinely operated other, extremely sophisticated, pieces of domestic technology such as washing or sewing machines. The determining principle behind these women's felt 'alienation' from the video seemed to be less to do with its technical complexity and more to do with its incorporation, alongside the television, into what they felt to be a principally masculine domain of domestic leisure - in which they feel they have no real place.

Appropriate technologies - for whom?

Before advancing our argument any further it is perhaps worth restating, at this point, the theoretical basis of our position in relation to the 'gendering' of technologies. We are concerned to make it clear that we are not advancing an 'essentialist' position which would interpret the empirical facts of different male and female patterns of use and involvement with technology as the inevitable results of the biological characteristics of the persons concerned. It is, in short, an argument about gender as a cultural category, rather than about sex as a biological category. Rather, we are concerned with the cultural construction of masculine and feminine positions, subjectivities and domains and the articulation (or disarticulation) of technologies into these culturally constructed domains. Different empirical persons who are biologically

male or female, may, of course, inhabit the cultural domains of masculinity and femininity in different ways. It is, however, the incorporation of technologies within these culturally defined patterns which is, for us, the determining issue.

As Kramarae (1988) notes, a whole set of issues are at stake here concerning which machines are 'called' technologies; of technologies not only as machines, but also as social relations and communications systems (cf. our comments above); of the modes in which social relations are themselves structured and (re)organised by technological systems; and of the role which the incorporation of technologies into gender domains plays in defining both the meanings of the technologies and in defining for whom their use is 'appropriate'. The question is how to move beyond the simple description of existing patterns.[2]

We shall return to the specific question of the gender determination of computer use at the end of this section. For the moment though, it is perhaps of more importance to pursue the theoretical point about how such differential patterns of use might be explained. In this connection Baines (1989) argues for the usefulness of Bush's (1983) concept of technological 'valences', as concerned with the culturally defined attributes (rather than the mechanically defined 'essential qualities') of technologies (again cf. our comments above on the rhetorical qualities of technologies). Bush argues that we must see social values, including

[2] Thus Rothschild (1983) describes how the home computer can function to reinforce the gender division of labour, 'mother using it for recipes and household accounts, children - boys more than girls - using it for games...and dad using it both as an 'adult toy' and possibly for professional work' (Rothschild, quoted in Baines, 1989)

those of gender as embedded in technologies; and this as a factor determining their social use:

> Tools and technologies have...valence(s)....A particular technological system, even an individual tool, has a tendency to interact in similar situations in identifiable and predictable ways...to fit in with certain social [and specifically gender - RS/DM] norms ...and to disturb others. (Bush, 1985, 155, quoted in Baines, 1989).

Rakow (1988a) argues against any tendency to assume that technologies produce homogeneous effects. Rather she suggests 'we should assume that the same technology may be used...by different people in different ways to different effect.' (Rakow, 1988a, 59). As posed, her argument has both the strengths and the weaknesses of the established 'uses and gratifications' perspective in the study of the mass media (cf. Halloran (19) - 'we should get away from thinking about what the media do to people and start thinking about what people do with the media'). The strength of the perspective lies in the acknowledgement of the potential 'openess' or 'polysemy' of both media products and technologies; its corresponding weakness lies partly in a tendency to overestimate this openess - and to neglect the inscription of powerful 'dominant' meanings through the design, structuring and marketing of products (cf. our comments elsewhere on the parallel between the arguments of Hall (1981) and Miller (1987); Morley and Silverstone, 1990, in press).

Rakow suggests that we should ask what role technologies play in constructing and maintaining gender relationships, seeing technology as 'a site where social practices are embedded (which) express and extend the construction of two asymmetrical genders' (1988a, 57) and crucially,

examining 'how certain values and meanings underlie the development of technologies, in particular, masculine and feminine assigned values and meanings about gender' (1988a, 60).

In parallel with our own earlier arguments, Gamarnikow and Purvis (1983, 5) suggest that 'the public/private split is a metaphor for the social patterning of gender'. Rakow's central point is that this articulation also implicates technologies. She argues:

> Practices involving technology are constituted ... in and through relations of gender. Who does what with a technology for what purposes is, at least in part, a cause and effect of gender. Consequently, not only a technology, but also a social practice involving it are associated by gender. Men are more likely than women to be owners and operators of cameras that take pictures of women. Women have their pictures taken and may be more likely to have responsibility for maintaining family ties and history through photographs .... Men speak, write and publish more in the public world of commerce, politics and ideas ... but women write the family letters (and) make the family telephone calls. (Rakow, 1988a, 67).

In a further paper Rakow (1988b) extends her analysis of the mutual 'implication' of technology and gender with particular reference to the telephone. She argues that the telephone is a technology which has been centrally implicated in managing the problems created by the physical separation of (feminine) activities in the private sphere from the predominantly masculine public sphere, the isolation of the home and of individual women in that domestic space. Indeed, she claims that the very history of the telephone 'cannot be told without accounting for the gender relations within which...(it)...developed' (Rakow, 1988b, 224). At an empirical level, the point is quite straightforward. As Mayer (1977, 23) reports 'the most important single factor [determining how many calls a

household will make] is the presence of a woman.' This is, of course, not only an empirical fact but also a cultural fact: the special role of the telephone in women's lives and the association of the telephone with women's talk ('gossip' or 'chatter') is condensed in the well known stereotype of the woman who talks 'too much' on the phone. As Rakow notes, not only folklore but also the phone companies' own marketing literature (after the initial period in which the networks seemed to disapprove of and discourage such 'social' uses of the instrument) is replete with images of the women user's 'peculiar addiction' to the phone.

However, we are, of course, concerned to offer an explanatory framework within which we might situate both the empirical facts and the cultural stereotypes. Maddox (1977) argues, quite simply, that women's particular attachment to the telephone, as a mode of symbolic communication, (which to some large extent replaces physical movement, but cf. Cowan, 1984,(1989)) is to be explained by women's actual social position in relation to transport, housing and public space. Maddox cites three principal reasons for many women's heavy usage of the telephone - their confinement to the home while caring for children, their fear of crime in public spaces and their physical separation from relatives - the maintenance of relations with whom they understand as being an integral part of their 'job description'.[3]

The central argument is that the nature of many women's empirical use of this particular technology is an effect of their understanding of their

[3] Both Rakow and Maddox note that, outside the home, women's other principal involvement with the phone has been as operators and telephonists, paid to mediate communications largely between men in the sphere of business.

gender defined role, in continuation with the social organisation of space and the function of the telephone in managing physically dispersed social relations. Most women principally use this technology to discharge their responsibilities for maintaining family and social relations and for home-business transactions (calls to plumbers, dentists, babysitters, etc.) However, beyond this, somewhat utilitarian, perspective Rakow (1988b, 207) also notes the important function of the phone for many housewives in alleviating their feelings of loneliness and isolation. In a similar vein, a number of the housewives interviewed in our own study are emphatic that the telephone is the key technology that they would hate to lose - because they see it (to use their repeating phrase) as a way of 'saving their sanity', given their felt sense of social isolation in their homes.

Video games and computers: masculinised technologies?

Skirrow (1986) offers an analysis which is designed to explore the articulation of gender and technology in the case of video games. She starts from the empirical fact that, on the whole, these games are not played by women and accounts for this by means of an analysis of the extent to which the pleasures offered by these games is gender-specific. The issue is then the way in which the games fail to engage with (or are, indeed, more actively perceived as being at odds with) feminine cultural sensibilities. Once again, the argument is that the determining principle is the articulation of specific technologies with the social and cultural organisation of gender domains. Thus Skirrow focuses on 'the relationship between a technologised sexuality and sexualised technology' (Skirrow, 1986, 142). In this particular case, Skirrow argues that 'video games are

particularly unattractive (to women) since they are part of a technology which...is identified with male power, and they are about mastering a specifically male anxiety in a specifically male way.' (138)

Skirrow's analysis is principally concerned with the question of how this particular technology has come to be 'identified' with a masculine domain. It is not a matter of machine-design and hardware, in her view - rather it is a question of the ways in which the software and its marketing (the games themselves, the advertising, the magazines) articulate the cultural meanings of the technology through a set of masculinised images. She notes that popular culture is marked by a clear split along gender lines and that the games industry relies heavily in its marketing strategies on 'realising' familiar elements of popular culture in its own specific form - and that 'most of these borrowings are from popular forms that appeal to boys' - principally action, adventure and horror genres - where the fundamental model is that of the single (masculine) hero 'waging a personal battle against overwhelming odds.' (120). As she observes, most of the adventure games involve some sort of quest, and the narratives draw heavily on the models of the exotic thriller, the travel story or science fiction - genres of story that particularly appeal to boys, where there is a strong emphasis on technology and 'technical inventions' (rather in the James Bond mould) as the 'solution' to narrative problems.

We want to suggest that the model offered by Skirrow can also be applied to understanding how (and why) the computer has primarily come to be seen (and used) as a 'masculine' technology, and how attempts to market the

'home computer' have largely ended up with its appropriation within the masculine subdivision of that predominantly feminine domain.

Just as Moores (see above) argues that radio technologies were initially of interest primarily to technically-minded male hobbyists (and just as Gray argues that video was certainly understood initially as a 'masculine toy') so Haddon notes that initial interest in home computers in the UK was primarily among 'adult male electronics enthusiasts who read Wireless World, Electronics Weekly, etc. ... (who) wanted to explore the technology, how it worked.' (Haddon, 1988, 16). He notes the defensiveness of the men concerned about being seen as 'playing around with toys' and about references to consumer electronic retailers such as Curry's and Dixon's as 'adult (male) toy shops'. Interestingly, Haddon's account of subsequent attempts to market home computers in the UK (via notions of 'user-friendliness' and the provision of documentation and 'instructions' designed for the non-expert, which de-emphasised the computers status as 'technology') can be read as an account of a (largely unsuccessful) attempt to 'de-masculinise' the home-computer and thus to enable it to break out of this narrow market. However, as Haddon notes, the 'non-experts', who were the new marketing strategists' addressees, were still primarily implied to be 'laymen' rather than women - whose involvement with home computers has thus far largely been confined to an indirect one in which, as part of their gender-defined responsibilities for the socialisation of children, they are concerned to acquire home computers to secure perceived 'educational' advantage for their children.

This pattern of the 'masculinisation' of computer technology is no simple

quirk of British culture. Similar patterns obtain in France as reported in the work of Jouet and Toussaint (1987) and Jouet (1988), who note that the majority of users both of home computers in general, and of the 'Minitel' system are men (by a ratio of around 3:1 in their findings). The problem, of course, is to understand why this is the case. In this connection Turkle (1988) offers an extremely interesting analysis of the seeming 'rejection' of computers by significant numbers of highly able female students at MIT and Harvard. The term Turkle was to describe this phenomenon is not, for instance, 'computer phobia', but rather what she calls 'computer reticence' - which she characterises as 'wanting to stay way, because the computer becomes a personal and cultural symbol of what a woman is not' (Turkle, 1988, 41).

Just as Skirrow is concerned to develop an analysis of the 'gender valence' of the specific pleasures offered by video games, as a means of understanding the social patterning of the use of that technology, Turkle attempts to develop an analysis of the motivating pleasures informing computer (and specifically 'hacker') culture. Turkle argues that one of the key satisfactions offered by getting involved with computers is that the involvement with an abstract formal system (as opposed to the ambiguities of interpersonal relationships) often functions as a 'safe' retreat into a protective world - 'a flight from relationships with people to relationships to the machine' (45) and she argues that this 'option' (an intensive involvement with a 'world' of things and formal systems) is particularly attractive to adolescent boys (a pattern which certainly seems to occur in the families we have studied). However, beyond this, Turkle also argues that 'hacker' culture is characterised by certain core

values - a preoccupation with 'winning' and 'risks' or 'dangerous' learning strategies in which the 'hacker' 'plunge(s) in first and tries to understand later' (49) - which, Turkle argues, are heavily identified with masculine cultural traits.[4]

However Turkle takes the argument a stage further, and offers valuable insights into the cultural processes in which the categories of gender act as filters which make particular technologies appear more or less 'appropriate' to individuals inhabiting differently gendered modes of subjectivity. McRobbie and Garber (1976) and Walkerdine (1988) among others have offered analyses of the processes through which adolescent girls, in particular, often feel compelled to reject subjects (and objects) which they view as gender-coded in such a way as to compromise their sense of femininity (cf. the debates on 'science and girls', 'mathematics and girls', etc.; see also our comments below on the girl in family A in our ethnography) It is for the same reasons, Turkle argues, that many women reject computers - because they perceive them as culturally-coded as masculine. And identity, of course, is always centrally about difference (cf. Saussure, 1974) - especially when one is dealing with such an intrinsically relational binary opposition as that of masculinity:femininity.

Turkle is concerned with the social construction of the computer as a masculine domain, as seen 'through the eyes of women who have come to see

[4] As we have argued above, these are cultural, not biological categories; thus the son and the father in Family A, in our study, can both be seen to understand the former's relation to technology as more masculine (and thus 'better') than the latter's.

something important about themselves in terms of what computers are not' (41). As she observes, women look at computers and see more than machines - they see those machines as predominantly mediated through what they perceive as a heavily masculine culture - and as a result they wish to differentiate themselves from this culture: because it would be threatening to their self-images to see themselves as 'a computer science type', and they 'don't want to be part of that world'. In short, Turkle argues, 'women use their rejection of ... computer(s) ... to assert something about themselves as women. Being a woman is (seen as) opposed to a compelling relationship with a thing (the computer) that shuts people out.' (50).

We argued above that we were concerned to offer this analysis as one which is concerned with cultural rather than biological categories. In concluding this section we would also sound one other note of caution. While we are convinced that gender is a vital dimension of the structuring of technologies' meanings and uses it does not, of course, function in isolation. In the end, of course, our concern will be to develop a mode of analysis in which the functioning of gender categories can be integrated along with (and at many points, as they cut across) other structuring categories - such as those of age, class and ethnicity.

Technologies and the dialectics of consumption

We have, on a number of occasions so far in this paper and elsewhere (Morley and Silverstone, 1990 in press), referred to the pivotal significance of consumption for the understanding of the place of technology in the family. Our consistent preoccupation with the process and dynamics of the relationship between the public and the private and of the relationship between the material and the symbolic has required that we take consumption very seriously indeed. It is now time to do this in a rather more focused way, however briefly. Even if consumption has not been much studied empirically in modern industrial societies, and with one or two notable exceptions (eg Veblen) not much theorised either, the last few years have seen increasing attention to consumption as an essential aspect of the dynamics of modern (and post-modern) society (Douglas and Isherwood, 1978, Baudrillard, 1988, Bourdieu, 1984, Miller 1987).

For us too, an understanding of consumption is, potentially, the key to an understanding of the the complexities of the relationship between families, technologies and the world beyond. Consumption is simultaneously an economic, a political and a cultural activity. When we consume we are engaging, through the market, in a set of economic relationships that bind us to the system of production in complex and dialectical ways. But that same complexity is expressed in the politics of modern society, where consumption can be seen as both an activity in which we express our acute and irredemiable dependence and at the same time (and in the same actions) as one in which we express our freedoms and construct our identities. Consumption is, perhaps above all, a cultural

activity. As Baudrillard suggests:

> ...we can conceive of consumption as a characteristic mode of industrial civilization on the condition that we separate it fundamentally from its current meaning as a process of satisfaction of needs. Consumption is not a passive mode of assimilation and appropriation which we can oppose to an active mode of production... we must clearly state (that) consumption is an active mode of relations (not only to objects, but to the collectivity and to the world), a systematic mode of activity and a global response on which our whole cultural system is founded. (Baudrillard, 1988, 21)

Consumption, in Baudrillard's terms, and in those of others, is a fundamentally contradictory activity - but above all an activity in which we express and define 'the culture of the moment' (Douglas and Isherwood, 1978, 57). Consumption is both an activity by which which we distinguish ourselves from others (Bourdieu, 1984) and identify with others (Miller, 1987). It is an activity in which we speak of, and define, our general cultural or sub-cultural inheritance and our social position. Through consumption we participate, and in that participation construct, our own identity in relation to neighbourhood or nation. Consumption, particularly in a post-Fordist and post-modern world, simultaneously fragments and disempowers, and unifies and empowers, us. In our consumption practices we depend on the forces of production and of the market but we can, and do, also influence production and the market through those practices. Perhaps, and above all, we can see consumption as an activity which involves meaning creation, bound up with issues of class position and the availability and use of resources certainly, but just as centrally bound up with issues of taste, style and what we have called the family's 'moral economy'. Through consumption we are bound (we bind ourselves) to the material and symbolic logic of industrial society.

Information and communication technologies are profoundly and essentially implicated in the dynamics of consumption, through their double articulation in culture. They are themselves consumed (with meanings that are both predefined in design and marketing, and negotiable) and they also enable consumption: through their consumed messages they bring news of consumption possibilities, and through them decisions to consume are communicated, goods ordered, objects and identities displayed. Information and communication technologies occupy, therefore, strategic places in modern society. But insofar as they enable us also to express ourselves through them, they also occupy tactical spaces; they provide the mechanisms for opposition to, and negotiation with, the dominant order (for a discussion of the strategies and tactics of consumption practices see de Certeau, 1984; Silverstone, 1989). It is quite impossible, therefore, to consider the sigificance of information and communication technologies for the family (no more nor less than for the organisation) without considering their relationship to the dynamics of consumption.

Consumption, Douglas and Isherwood suggest, is, like Lévi-Strauss' myths, good to think with. In words not yet dissimilar to those of Baudrillard (though from an entirely different political and theoretical perspective) they see consumption as a social practice:

> Within the available time and space the individual uses consumption to say something about himself, the family, his locality, whether in town or country, on vacation or at home...consumption is an active process in which all the social categories are being continually redefined. (Douglas and Isherwood, 1974, 68)

And in terms which define consumption as information, they speak of its systemic qualities:

> Consumption goods are not...mere messages; they constitute the very system itself. Take them out of human intercourse and you have dismantled the whole thing. In being offered, accepted or refused, they either reinforce or undermine existing boundaries. The goods are both the hardware and the software, so to speak, of an information system whose principal concern is to monitor its own performance. (ibid. 72)[1]

Such a perspective as this opens up consumption for examination both as a material and a symbolic activity (though Douglas and Isherwood almost entirely stress the symbolic dimension). It begs questions about cultural difference and cultural identity in such a way as to insist both on empirical enquiry and on a concern with the dynamics of meaning in the practices of everyday life. Consumption is a daily activity. In Douglas and Isherwood's eyes it provides a mechanism (a rhetoric) for social classification. Communication and information are of its essence. But equally, consumption is in turn dependent on technologies, or more particularly on the level of technology which sustains a community at a given place and time (102ff). Communication and information technologies are, once again, critical here, especially, in their view, for their capacity to increase personal availability and to affect what they define as the periodicities of daily life. Information and communication technologies, like the telephone or the television affect our accessibility; other domestic technologies, like the vacuum cleaner and the washing machine, enable us to release ourselves from the burden of high frequency, low status, domestic tasks (cf. Gershuny, 1987, but for a different view of the 'liberation' occasioned by domestic technologies,

[1] While accepting the main burden of Douglas and Isherwood's argument we would want to distance ourselves from the last phrase, and in particular from the force of the 'principal'. Of course consumption is a reflexive activity, but it is also both materially constrained and has material consequences.

see Cowan, 1984 (1989)). Our capacity to consume and to take advantage of the opportunities provided by such technologies is a function not just of available marginal resources or a rise in the level of real incomes, but in the need to synchronise consumption activities with those of similar 'periodicity constraints'. The rapid diffusion of the video and the micro-wave, which are both time (and labour) shifting technologies, may be explained in this way. They enable us to de-synchronise and then re-synchronise our activities with those of others.

Here, then is a view of consumption, firmly grounded in an idealist anthropology, but which nevertheless insists on seeing it dynamically as the site for the negotiation of public and private culture:

> ...consumption decisions become the vital source of the culture of the moment...Consumption is the very arena in which culture is fought over and licked into shape. (Douglas and Isherwood, 1974, 57)

There are two points which follow from this observation. One is well developed in their own work. The other is not, and is the source of its major criticism (Miller, 1987, 146). The first is that consumption is about (indeed it actually is) information and communication. This has, of course, as we have already suggested, especial relevance for information and communication technologies which become both the means and the end of consumption practices. The second is that consumption is about power. While they acknowledge this (89) they do not develop it. And the consequence is an overly coherent view of consumption as a cognitive rather than a material process, and a view which disguises both the contradictions (and the frustrations) of consumption as well as the implications of consumption practices in ideology and commercial interest.

An approach which, of course, does pursue the dialectic of the material and the symbolic and which does so through the analysis of the relationship between social structure and cultural practice is that of Pierre Bourdieu (esp. 1977, 1984). Through his notion of the habitus and his concern with the modus operandi of cultural identity, style and taste, he offers an exceptional and powerful approach to the study of consumption. This, too, is not without its critics and we shall return to the criticisms, but first a brief resumé.

> The habitus is both the generative principle of objectively classifiable judgements and the system of classification...of these practices. It is in the relationship between the two capacities which define the habitus, the capacity to produce classifiable practices and works, and the capacity to differentiate and appreciate these practices and products (taste), that the represented social world, ie., the space of life-styles, is constituted. (Bourdieu, 1984, 170)

The habitus relates to the underlying order of habits and values which define the transformatory logic of cultural practices. A child learns through socialisation (and education) a set of classifying principles which are together cognitive, affective and evaluative. These provide the mechanisms for the articulation of class position, class culture and above all, taste and life style. They are a set of discriminating practices by which on the one hand one's own culture can be distinguished and defended from those above or below one socially; and, on the other, a set of absorbing practices by which the new and the unfamiliar can be incorporated and accepted as part of the familiar and taken for granted. The habitus is the cultural residue of historical changes as they affect an individual's or a family's class, status and power, but a residue which is generative of identity and difference

through the application in practice of structuring (and structured) systems of classificatory schemes and schemes of perception and taste.

Inscribed in the habitus is the 'whole structure of the system of conditions, as it presents itself in the experience of a life-condition occupying a particular position within that structure' (ibid. 172). The habitus itself sytematically produces life-styles[2]. And life-styles are defined by, and expressed through, taste:

> Taste, the propensity and capacity to appropriate (materially and symbolically) a given class of classified, classifying objects or practices, is the generative formula of life-style, a unitary set of distinctive preferences which express the same expressive intention in the specific logic of each of the symbolic sub-spaces, furniture, clothing, language or body hexis. (ibid. 173)

It is worth point out here that this is something much in evidence in present day marketing strategies, where the fine scale discriminations of style, taste and identity are the focus of niche marketing, which in turn serves to provide the fuel for ever finer discriminations and greater fragmentation in commodities and markets.

Consumption, from this point of view, is the active discrimination through the purchase, use and evaluation, and hence 'construction', of objects. The objects themselves present themselves for consumption both as material

[2] 'Life-styles are thus the systematic products of habitus, which, perceived in their mutual relations through the scheme of the habitus, become sign systems that are socially qualified (as 'distinguished', 'vulgar' etc.). The dialectic of conditions and habitus is the basis of an alchemy which transforms the distribution of capital, the balance-sheet of a power relation, into a system of perceived differences, distinctive properties, that is, a distribution of symbolic capital, legitimate capital, whose objective truth is misrecognised.' (ibid. 172)

and symbolic goods. Our strategies of consumption are constrained both by our social position and by the materiality of the objects consumed. As Daniel Miller observes: 'The use of artefact as symbol does not in any way detract from its significance as tool, material worked, or environment experienced.' (Miller, 1987, 105) Both society and artefect provide material constraints, a framework from within which a class defines its habitus, and from within the habitus and the activities that take place there, objects are consumed and social classes are reproduced.

The difference between Bourdieu's position and that of Douglas and Isherwood is not just, then, in the identification of the structured social location within which consumption takes place but, crucially, in the difference between consumption as the 'culture of the moment' and Bourdieu's insistence on its embeddedness in history:

> ...it is their present and past positions in the social structure that biological individuals carry with them, at all times and in all places, in the form of dispositions which are so many marks of social position. (Bourdieu, 1977, 82)

This brief exposition scarcely does justice to the range and complexity of Bourdieu's analysis. Particularly in Distinction he has drawn a brilliant map of French cultural life and has defined within it the social spaces and the fields, and the routes of practice, across which classes and class fractions make their discriminations, and play and replay their cultural destinies through consumption and display. The map is a political map. At issue is the ever uneven struggle for cultural power, for the classifications and commonplaces of everyday life; for it is in the control of these that power, influence, resources and identity are won

and lost. Once again the consumption of goods is of the essence:

> One has to bear in mind that goods are converted into distinctive signs, which may be signs of distinction but also of vulgarity, as soon as they are perceived relationally, to see that the representation which individuals and groups inevitably project through their practices and properties is an integral part of social reality. A class is defined as much by its being-perceived as by its being, by its consumption - which need not be conspicuous in order to be symbolic - as much as by its relations of production (even if it is true that the latter governs the former). (Bourdieu, 1984, 483)

Consumption then is self-definition and self-defense, and this is true not just for identifiable and perhaps oppositional sub-cultures (Hebdidge, 1979) but for all of us (more or less) in our everyday lives. Bourdieu has little to say, however, about information and communication technologies as objects to, or aids in, consumption. His consumers are defined by their tastes in art and music, their competence in and their displays of food, clothes and personal space, even their readership of newspapers and as expressers of political opinions, but the mass media, the computer and the telephone are oddly absent.

Absent too, as Daniel Miller points out, is any sense of the 'actual brilliance often displayed in the art of living in modern society by people of all classes, and the use of ambiguities, inconsistencies, resistance, framing and such devices in individual and social strategies' (Miller, 1987, 155, cf. de Certeau, 1984, 59-60). In addition Bourdieu ignores almost entirely the sphere of production, and especially the market (and marketing) as an essential mediator. But above all what mars the work as a whole, from the point of view of a theory of consumption, is the reduction of historical and social difference, as well as the

contradictions and indeterminacies of consumption, to a model both of the habitus and of French society which stresses homogeneity and clearly structured lines of social and political cleavage. As Miller suggests, not only is the objective given precedence over the subjective, but class is given precedence over such factors as religion, morals and the nature of the self in the matter of cultural choice and identity. What is missing, in other words, is a sensitivity to ethnographically derivable social and cultural difference.

It is towards this aim that Miller directs his own efforts, although this too is without the benefit of his own ethnography (but see Miller, 1988).

Miller builds his model of consumption on an analysis of the object in the work of Hegel, Munn and Simmel, and on a consideration of contemporary theoretical and empirical work on consumption practices on modern society. At the heart of his theory lies the perception of consumption as negation, as the appropriation and reevaluation of the potential for alienation inscribed in the commodity. Consumption, in this view, is a specific cultural practice. It is work, and through it commodities become transformed. They are transformed by the rituals of incorporation, by the length of time an object is owned, by the significance of the object as a badge of membership of neighbourhood or sub-culture:

> The work done on a pint of beer includes the whole culture of pub behaviour, such as buying rounds, as well as the development of an often long term association between the consumer and a particular beer, which excludes all other types of drink or brands identified with other social groups by gender, class, parochial affinity and so on. Such cultural practices cannot be reduced to mere social distinction, but should be seen as constituting a highly specific and often extremely important material presence generating

> possibilities of sociability and cognitive order, as well as engendering ideas of morality, ideal worlds and other abstract worlds. (Miller 1987, 191; cf Bourdieu on the café, 1984, 183)

Miller acknowledges, of course, the significance of advertising and marketing in their efforts to manage and manipulate the work of consumption, though he perhaps underestimates it. The creative possibilities provided for in the open texts of commodities are well known, and the battle for the consumer is a battle for textual closure, fought out through the rhetoric of the image (Barthes, 1977). Market research, specifically in its qualitative forms, is directed precisely towards this end.

From another point of view Miller can be criticised also for not paying sufficient attention to the contradictions and frustrations necessarily associated with consumption, particularly with failed, or compromised consumption. Full self-realisation through consumption is almost certainly an ideal (indeed capitalism insists that it should remain an ideal). Indeed, as Alfred Gell (1988) points out in a review of Miller's book, every consumption decision is at the same time an acceptance of its limitations. An understanding of consumption as a satisfactory form of objectification can only be realised if the parallel work of the imagination and fantasy - that is of symbolic consumption - is added to the first. Without some sense of these frustrations and limitations, as well as a sense of inequalities of power which they express, analyses of consumption have a tendency to romanticise consumers freedoms (cf. the same tendency in the work on audiences in media studies in eg. Fiske, 1988; cf. also de Certeau, 1984). What is required, too, is a sense of the differential intensities and qualities of consumption - of the modes

of consumption - which are both historically specific, à la modes of production, but also culturally and socially specific, in the sense of the recognition of differences in the degrees of freedom and creativity available to the consumer in relation to particular objects (this is Miller's point, and see our discussion of Family B below).

This much said, however, Miller's approach provides an important avenue into the study of consumption practices, above all for his insistence on the dynamic, integrative but, perhaps above all, the indeterminate work of consumption. Consumption is indeterminate because of the potential available in the commodity for its transformation into appropriated culture. In this sense consumption is a key mechanism in the articulation and the definition of the boundary between the public and the private in the realm of material culture. It is a key element, too, as far as households and families are concerned, in the process of domestication through which private culture is defined and in which family and technology systems are adjusted one to another.

As Miller suggests in his conclusion, consumption provides a mechanism for the authentication of public culture in the private domain, one in which utility of the object is not defined through practical uses or the satisfaction of material needs, but through its appropriation into inalienable culture: defined when we are able to say about an object that 'This is mine'. In these senses mass produced goods are an integral part of our capacity to create ourselves in the practices of everyday life; they are the cultural resources out of which we create our sense ourselves; they are the focus of all domestic energies.

Perhaps one crucial aspect of consumption that has been understated in the arguments thus far - it has been presumed but now needs some further explication - is of consumption as a political and economic process. It is accepted that consumption is eminently social, that through the circulation and exchange, the purchase and the display of objects, social life both in the public and private domains is reproduced; accepted also is that consumption consists in the construction and communication of meanings. However, as Arjun Appadurai (198) argues, consumption is neither an expression of human needs (treated as unproblematic) nor the result of social manipulation, noe even a prgamatic acceptance of only those objects which are available. Consumption has to be treated as an aspect of the political economy of societies - and of course not just capitalist societies.

> What does this view of consumption entail? It means looking at consumption (and the demand that makes it possible) as a focus not only for sending social messages (as Douglas has proposed) but for receiving them as well. Demand thus conceals two different relationships between consumption and production: 1. On the one hand, demand is determined by social and economic forces; 2. on the other, it can manipulate, within limits, these social and economic forces. (Appadurai, 198 , 31)

The shifting relations of production and consumption, supply and demand and of consumption as production have been discussed elsewhere. As Gershuny and others have argued the changing pattern of the domestic division of labour and its responsiveness to the promptings of technological and wider economic changes have altered the character of domestic consumption (to the point where at least it is believed - in Mrs. Thatcher's Britain - that the consumers are the 'kings and queens' of the

market-place), progressively releasing the household from its dependence on public services, enabling a kind of domestic production to re-enter the home, and generating a new set of demands on the service economy as a whole (Gershuny and Miles, 1983).

Modern political economy, and modern economics, is obviously going to have to take consumption more seriously, especially in a post-Fordist (post-modern) age in which the economies, at least of the First World, are becoming increasingly dependent on the discriminations of taste and style, and the consequential fragmentation of the market which ensues.

One aspect of this fragmentation, which Appadurai discusses, is the distinction between the necessity and the luxury, a distinction which once again finds its meaning both within a political economy of style (cf Bourdieu, 1984) - a politics of taste, and also within a model of consumption which acknowledges the commodity and the object as having both a social history and a cultural biography (the difference between the two is an expression of two different kinds of temporality: the long term processes of social and technological change on the one hand and the rather more focused changes in the specific history of object or commodity on the other). Objects move through their lifetime in and out of the categories of luxury and necessity, and even if, as Appadurai suggests, we

regard luxuries as a special 'register' of consumption[3], rather than as a distinct category of object, those shifts are not permanent, fixed nor necessarily consistent:

> The fact is that the line between luxury and everyday commodities is not only a historically shifting one, but even at any given point in time what looks like a homogeneous, bulk item [Appadurai is talking about sugar, RS/DM] of extremely limited semantic range can become very different in the course of distribution and consumption (Appadurai, 40)

At the heart of Appadurai's view of consumption, as indeed at the heart of our own, lies a view of it as political, but not political simply understood as the expression of the relations of privilege and social control. It is political in terms of 'the constant tension between the existing frameworks (of price, bargaining, and so forth) and the tendency of commodities to breach these frameworks' (Appadurai, 57, cf. Miller, 1987). The commodity, its circulation and its consumption, is the focus for a struggle over its meaning, a struggle which is the expression of the different interests of those who are engaged in the consumption process.

The politics of consumption is therefore an unequal politics over meaning, identity and the definition of commodities as they become objects, as they are domesticated and brought within the tactical spaces, the 'perambulatory rhetorics' (de Certeau, 1984), of the family and of everyday life. It is, of course, our contention that the consumption of

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[3] 'I propose that we regard luxury goods not so much in contrast to necessities (a contrast filled with problems) but as goods whose principal use is rhetorical and social, goods that are simply incarnated signs. The necessity to which they respond is fundamentally political. Better still, since most luxury goods are used (though in special ways and at special cost), it might make more sense to regard luxury as a special 'register' of consumption (by analogy with the linguistic model) than to regard them as a special class of thing' (Appadurai, 38)

domestic technologies in general and information and communication technologies in particular is no different in kind from the consumption of other commodities, nor can be it understood outside a framework of the kind that we have been presenting here. What is now required is an exploration of its specificities, an exploration which requires immersion into the mire of the empirical world.

Ethnographic Portraits: two families and their technologies

We offer below accounts of the patterning and use of information and communication technologies in two of the first group of families with whom we worked. Our primary aim is to offer insights into some of the key dynamics and processes in the family cultures of these two (rather different and deliberately constrasted) households, and to begin to demonstrate the context-specific ways in which technologies come to acquire particular meanings and thus come to be used for different purposes by different people (both within and between these families).

We are aware that, as always, in research of this kind, our ability to develop a conceptual and theoretical framework for the analysis (for all its inconsistencies and shortcomings) has run ahead of our ability to operationalise all of these concepts in our empirical work. The two levels of work are, of course, intrinsically difficult to synchronise particularly while field-work is still in progress. Thus parts of the conceptual framwork outlined in this paper have been developed after the first phase of the field-work within which these families fell, partly in response to the gaps and problems identified in that first round of empirical work. To that extent by no means all the conceptual issues identified earlier in the paper are addressed here - though we shall of course aim to do so in future reports. Moreover, in this paper we concentrate on materials derived from specifically ethnographic (observational) work. Our later reports will also integrate materials derived from our diary study of time use, from the psychological perspective of personal construct interviews and from the other field

methods which inform our current studies.

Family A

The husband (Derek) is 48 and his wife (Maureen), 46; they have 2 children, a boy (Paul) aged 15 and a girl (Suzanne) of 12. The husband is a self-employed consultant in the market research field; his wife works part-time, as a sandwich maker and cleaner in the cafeteria in a local school. They own a small house in a slightly down-market area of south-west London. The parents both left school at 15. Both vote Conservative.

They have three televisions, the one with the remote control in their sitting room, the others in the childrens' bedrooms; two computers: Paul has a Sinclair in his room, and Derek, the father, has an Amstrad with a printer which he uses for work in the front room which is now converted into his office. There is video in the sitting room, and an electric cooker, a refrigerator, an electric kettle, a toaster, a radio and a microwave (as well as Maureen's clock) in the kitchen; and a washing machine and a spin drier in the utility room. Maureen has an electric iron and a hair crimper. There are two phones: one in the sitting-room, one in the office. Paul has a hi-fi system and a walkman, as well as his computer and his computer games in his room, and Suzanne also has a hi-fi, a radio and an under-used walkman. They have a car which both parents use.

For some years Derek had a relatively well paid research job in the car

industry, which he felt compelled to leave as a result of administrative and technological changes which seemed to marginalise his skills. His present work situation is rather unstable and, as a result, the family's rise from working class to lower middle class status has halted. Indeed their economic position is now quite precarious: they are somewhat fearful of their future prospects and Maureen has extended her part-time hours of work to increase the family's income (she is in fact the only one of the women in this first group of four families who works primarily for economic rather than social reasons). The organisation of family activities is also affected by the fact that Derek works from home (the sitting room has been converted into his office) and thus he has a somewhat different perspective on home/work boundaries than the men in our other families who go to work outside the home.

Derek sees his presently difficult employment situation as the result of the imposition of a new form of short-term 'economic rationality' imposed in the company for whom he worked by 'accountants', through the medium of new technologies - (especially computer data bases) which were seen to replace (and thus marginalise) his personal research skills (built up through a network of 'personal contacts' in the relevant industries). The effects of this on the family have been complex. At the simplest level the consequent fall in his earning capacity means that the family is not well off and lacks the financial resources to engage in many forms of consumption. Thus, for instance, the children are encouraged to ensure that they mainly receive rather than make phone calls to their friends and the wife has put up on the wall a list of the cost per minute of calling the people they most often do phone. However it is not only a matter of

money, because (see below) (a) Derek in particular also expresses moral disapproval of various forms of consumption and (b) the controls exercised over telephone communication also relate to certain family rules about the boundaries and privacy of the household.

Derek's anxieties about his loss of status in the external world also have effects within the household. On the one hand it would seem that, lacking external recognition, it is of particular importance to him to establish his position as head of the household by demonstrating his technological mastery (see below) inside the family. At the same time although he is at home more than his wife, he seems to have refused to adjust his social role in the domain of domestic labour to recognise this fact: such simple domestic responsibilities as bringing in the milk bottles, paying bills, cooking meals and washing are still, as far as he is concerned, his wife's responsibility.

Boundaries: external and internal

In this family there is a stress on the importance of boundaries and control. Perhaps by way of compensation for his sense of lack of control over the outside world, Derek, in particular, is very concerned to regulate the functions of communicative technologies in breaking the boundary between the private and public spheres. While there seemed to be a low level of integration (for the parents) in the neighbourhood at large, there was a high level of integration within the family (both in terms of visible expressions of closeness, and a low level of gender based separation in the parents' social life). The family displayed a common pattern, in which the effective family unit (for leisure purposes such as

watching television) was mother and father and daughter, based in the sitting room, Paul, the teenage son, separated off - spending his time with his own ICT's in his bedroom. However the degree of differentiation/separation between Paul and the rest of the family was weaker than in the other families studied.

The family's concern with regulating the cost of phone calls has already been noted. However, while some part of the parents' anxieties are, no doubt, economic, broader issues concerning their ability to control and supervise their children do also seem to arise in this connection. The parents are proud of the fact that Suzanne, on the whole, receives calls from, rather than makes calls to her friends, and she asks permission before making a call out herself. However, they are deeply concerned about the stories they have read of teenagers using BT's 'party lines', and running up huge bills for their parents to pay. They worry about leaving their children alone in the house for this reason and are anxious that the introduction of teleshopping facilities will exacerbate these temptations for their children. Similarly, they are concerned by the prospect of deregulated satellite broadcasting bringing pornographic or violent programming within their children's grasp: "(They) have sets in their rooms and (we) can't know what they're watching all the time." Thus deregulation is not only a concern at the level of the disruption of national boundaries by transnational broadcasters - for this family at least it is a question of the fear of family boundaries being transgressed.

Their parents concern to regulate their children's use of ICTs is

powerfully symbolised by the 'umbilical' principle of the electricity supply in this house: the only power point upstairs is in the parent's bedroom, from which wires are run into the children's rooms - and the children's electricity supply can thus be controlled directly by the parents. This, naturally, is a source of some tension because, certainly for Paul, part of the attraction of watching television in his room is his sense of this as a relatively unpoliced/unsupervised activity.

The parents explain that they feel that they do need to 'supervise' their daughter's use of the phone, as noted earlier, but again this is perhaps not only an economic issue. It is also a question of parental resentment of their daughter's incoming calls, as an intrusion into their domestic privacy - as events threatening a potentially fragile boundary, which they feel some need to reinforce. Thus, the daughter explains that her father doesn't like her friends ringing her so much "because lots of people go too far ... some of my friends do funny phone calls .... They ... dial your number and when you answer they start laughing ... they do raspberries down the phone and my Dad doesn't like it."

Unlike the majority of the families studied, where it is the wife who uses the phone most, as a psychic life-line to alleviate her sense of isolation, the pattern is different in this family. Here the wife feels less need to use the phone in this way for her own purposes, as she goes out to work herself. In fact she principally uses the phone as the medium for discharging what she sees as her familial obligations of keeping in touch both with her and her husband's kin. Interestingly, even this has been a source of some tension: the list of telephone costs on the wall

arose as a result of an occasion when her husband felt she spent 'too long' on the phone when speaking to his sister.

In this family it is the husband who uses the phone most, for business purposes, as he works from home. He insists, however, on a strictly limited definition of the phone - as a 'tool' for necessary contact "passing information back and forth". And even then, he mistrusts the phone "because it's so much easier to lie over the phone than it is face to face." Beyond that, he regards it as "an intrusion, it gets in the way ... the phone rings when you don't want it to ring." For this man the maintenance of internal boundaries is also important. Thus he explains that he "wouldn't have a telephone in the bedroom ... unless someone was ill." (cf. Bernstein quoted earlier p.17)

Technology and Control

Derek's attitudes towards technology are complex and contradictory, but he expresses an overall sense of defeatism, or cynical resignation as a result of the down-turn in his career - which leads both to a broader sense of pessimism about 'the future' and a negative attitude towards what he sees as the prevailing social uses of new technology.

To some extent his attitudes to domestic technology, which certainly are a powerful influence within the dynamics of this family, can be seen to be derived from his experiences at work. To some large extent he 'blames' his own current economic difficulties on 'technology', given that he sees

his own 'cultural capital' as having been devalued and replaced by computerised information systems in the company for which he worked. Thus his present position of insecure freelance employment has had powerful consequences on the family in two senses. Not only has it simply reduced their overall standard of living - 'technology' has also been constructed within this family's mythology as an inherently problematic and contradictory force.

He distinguishes strongly between the (positive) potential of technology and it's regressive uses. Indeed he has a distinct interest in communications technologies 'in themselves'. Thus, not only has he mastered the operational use of his home computer (which he needs for his work) but he literally 'experiments' with the family's microwave (putting different things in for different periods of time to "see what happens to them"). However the computer is an object of great ambivalence for him: while he has mastered it for his own purposes he cannot communicate his mastery to other professionals in the field. He has a 'one-sided' form of mastery of technology in which he has not learnt to externalise his knowledge and skills by acquiring the appropriate professional vocabulary and thus has trouble gaining external recognition of his abilities. (cf. our earlier comments on Bernstien and Bourdieu)

Perhaps by way of rationalisation of this inability, he also scorns the whole communicative/marketing dimension of business. He expresses disdain for "all this wrapping things up" and for people who are "only concerned about the presentation" which, as far as he is concerned, is little more than a set of "con-tricks" in which, in order to be successful, you are

required to "call yourself" by a particular job title or "sign yourself off" in a certain way. In short, he thinks that the industry in which he works is improperly concerned with "high faluting names for things" which, to him, are "only common sense". He claims that he "doesn't need those systems to tell me how to do it" and doesn't "need those analytical techniques" because he has a richer and superior resource - years of personal experience. Unfortunately this resource is not widely valued in the market in which he works, because nowadays "they've dehumanised it". 'They' are the accountants and computer specialists who failed to recognise the value of the "contacts ... built up over a long period" - personalised communication networks, built on trust. The problem being that, like this man, these people did not necessarily have "formal qualifications" and so, in terms of "modern ideas" they have been undervalued and their networks broken up.

In fact, in much of this man's talk there is a very strong theme of how depersonalisation of information leads to loss of control and even to financial/moral ruin. He is very concerned about the ways in which technology "has now taken over", and has 'dehumanised' skills of various sorts, destroying crafts and skills by its "mechanical/ logical" methods, "once it's all been taken away from people and put in machines". This, for him, is perhaps best symbolised by the telephone answering machine. He will not leave messages on these machines, because it seems unnatural and improper to him that he should have to "talk to the stupid machine ... I don't like that robot type of thing ... it's too impersonal."

This man frequently expresses a distinctly fearful attitude towards the

possibility of large organisations manipulating technology to take advantage of the individual in the same way. In a general sense, he is fearful of the potential of ICT's for disembedding information from a human context - this fear of a 'loss of control' concerns him greatly. Thus, he refuses to have a PIN number because of the danger of someone else using it and leaving him responsible for the bill. He is deeply anxious about the possibility of errors in BT's 'System X' leading to the family being wrongly billed for phone calls they haven't made. He is anxious about the misuse of personal data by the police and other agencies, "Well, it's on computers, so [sic - RS/DM] sooner or later it's going to be misused" - an attitude which is meshed in with a fundamental view of the incompetent and corrupt nature of most large institutions. He is basically concerned that with "the electronic thing, nothing's really secure any more" and is fearful of computer hackers because "there's always somebody who will find a way of getting through" and thus 'they' may, in his worst fears, end up being able to know "exactly what is in your head".

At key moments, his attitudes towards technology are parallelled by a more generally fearful relation to what he perceives as the depersonalising dimensions of, the 'modern' world: "when you are in the middle of a modern shopping complex ... it makes you feel small ... so exposed ... you're never quite sure what's expected of you."

<u>The organisation of familial domains: space, gender, generation</u>

Another dimension of familial organisation in which we see here a concern for boundary maintenance is that of gender. In particular, it is clear

that, within the home, Maureen has responsibilities for a clear set of concerns. Thus, by way of dealing with their precarious financial position, she keeps the family finances in a set of books. It is she who knows all the names, ages and birthdays of her and her husband's kin and she who takes responsibility for managing kin relations - principally via the telephone. Indeed this is the principle significance of the phone for her - as a way of conveying/receiving "family news" and as a way of keeping tabs on her children (she requires them to phone her to let her know what they are doing, if they are out late or otherwise have departed from their normal routines).

On the whole, she displays a fairly passive and accommodative attitude to their household ICT's (cf. the wife in Family B). When her son is playing loud music in his room, her response is to "want to disappear somewhere where you couldn't hear it." Even her sense of her own pleasure in watching television ("I like all the soaps of course, though I know, deep down it's a lot of drivel") is expressed not only guiltily but also passively. Thus, what she likes about television is "it makes me sit down and relax ... I stop thinking about what I've got to do, the next job." She does, of course, have her own domain, the kitchen, and there the radio is tuned to Capital - which is her preferred station. Thus, within her own domain she can exercise a degree of choice. However, she does not only have her own physical domain, she also has her own organisation of time. In the kitchen she has her "private clock", which she keeps 15-20 minutes fast "so I'm always early and ... can have some time for

myself."

We have argued earlier that ICT's play an important part in the construction of internal and external boundaries and identities. Some part of this argument can be usefully exemplified if we focus on the differential relations to technology and space within the household that are demonstrated by the son and the daughter in this family. As noted earlier, Suzanne spends little time in her own room - as opposed to watching TV in company with her mother and father in the sitting room. Conversely, Paul spends most of his time in his own room, utilising the collection of ICT equipment which he has bought (with money earned from his Saturday job) and installed there (a pattern which is replicated in several of our families).

His mother refers to his room as "his womb" and it certainly seems to function as a significant retreat for him. Here he can stay up late watching TV (and possibly watching his preferred form of 'action movies', of which his parents disapprove). In the room he has a computer, a hi-fi, a TV and he is saving for a video. He and his friends are very interested in technology. He spends school lunch times at a friend's house playing video games. They often visit consumer electronic shops just to see "what's new", they read consumer electronic catalogues like magazines and will go to W.H. Smiths just to browse through the computer magazines. Paul is heavily dependent on technology to offer him a sense of "something going on", preferably in the form of music (or, as his mother puts it "noise"). He says that he "can't work without it ... I like music, I don't like sitting and being dull. If I'm in my bedroom and it's all

quiet, it feels like school and it depresses me."

He wears his Walkman whenever he leaves the house and takes it to school. He remarks that his classmates "reckon my Walkman is my life-support system." He says that he does "feel lost without it ... it just feels like I'm not all there .... As soon as I run out of batteries I'm down the shop, even if I've only got a pound left." The other technology on which he is quite dependent is his Swatch: "If my watch broke down I wouldn't know what to do ... my other watch kept breaking, I was hopeless - I had to find people (at school) who had watches to walk around with".

Despite their contradictory attitudes towards technology the parents encourage their children's acquisition of ICT - both for rather undefined educational purposes and as training in budgeting/saving. This works well with Paul, but fails with Suzanne. Her brother would be willing to give her his old ICT equipment, as 'hand-me-downs' when he upgrades his systems, but his father insists that she should save up and buy them from him. However Suzanne, along with many teenage girls, is more interested in buying clothes and other such 'frivolous' things. Indeed, her very investment in femininity is at odds with the attitudes that would be required to engage more seriously with ICT (cf. McRobbie and Garber (1976); Turkle (1988). In fact the daughter is both much less dependent on technology than her brother ("I plug in less than he does") and less concerned to differentiate herself from her parents by demarcating her own private space within the house.

Gendered technologies and technological competence/confidence

The contrasts in attitudes towards different technologies displayed by the mother and the son in the family are perhaps the most revealing. Paul is positively disdainful of computers - as mere tools which he feels well able to master: "A computer's dumb, isn't it ... you've got to tell it what to do ... it doesn't know what to do until you load something in to it ... say you programmed it to wash dishes, and then put it in front of a car ... it would wash an area the size of a dish ... or just look at it and say ... that's not the object I've been told to wash." Given this attitude, he has no particular fear of 'technical breakdowns' - "I just do things as I do them, and if it goes wrong, it goes wrong" - which doesn't bother him, given his basic confidence in his ability to "figure it out". On the other hand, the son cannot operate the washing machine, and is frightened of "touching the cooker", although he will now use the microwave because "it's safer ... because its a closed unit."

Conversely, his mother, while being the only member of the household who can operate the washing machine, cannot operate the video and is positively frightened of the computer. She has a very basic fear of uncontrollable technological muddles, with "everything all wrong, twisted around; what do I do, where do I go? ...". She explains that she's "not confident" with the computer "it makes me feel uneasy, I'm afraid that if I touch a button I shouldn't, everything will go haywire ... if I touch one button it will all go wrong, that's the way I feel." She is quite uninterested in the computer: "it does completely nothing for me. The only time I use it is if (her husband) wants me to do something ...". However, with technologies where she feels confident, and where she has a distinct interest in their uses, she will experiment: "you take the

washing machine...if I can find a different way of getting the clothes better I'll play around with it until I find out, like the microwave...I'll fiddle around until...(I get) what I want."

The gendered difference of such attitudes does not, of course, relate only to ICT or electronic technologies. The contrast here is clearest if we consider the attitudes of this woman and her son to modes of transport. Just as in the case of the computer, where the woman fears loss of control and consequent muddle, the idea of driving a car, she says "doesn't appeal to me at all, I'm scared of it ... I have this fear of this monster in my hands." For her son, his dream is "to ride a motorbike ... the feeling of speed ... the wind in my face" (cf. our comments on the 'gendering' of pleasure).

Technological inheritances

Within families, of course there are many forms of gender-based learning. Thus, in the example quoted above, Paul's desire for the "real thrill" of riding a motorbike is perhaps not unrelated to his father's claim that a cut-throat razor is really "the only way to shave." However, beyond this level of quite banal and predictable (though nonetheless powerful) forms of learning of the appropriate forms and symbols of gender identity, we can also identify some interesting processes, when we look at the technological inheritance of attitudes and competences from father to son, within this family.

We have already noted Paul's easy confidence with his ability to "figure out" technologies. The further point is that, in this, he takes a very

much more 'adventurous' attitude than does his father. Indeed, he is quite (humorously) scornful of his father's "logical" approach - "you'd read the manual", he says, when asked by his father what he would do when confronted with an unknown machine or problem. For him, on the contrary it is a matter of pride to "figure it out" for himself without reference to any "manual" (cf. Turkle (1984) on hackers and the 'thrills' of risk-taking). His attitude is that "you've got to work around ... and just try to work it out, without reading the instructions ... press the buttons and work it out from there ... work them out by using them ... I never read the instructions ... I'd rather figure it out for myself."

In one sense, this can be seen as an advance in confidence in relation to technology on the part of this young man, as compared with his father. But inheritances are complex equations, and his seeming bravado takes on another meaning if we note also that he "hates reading" and is "not very good at spelling" - which means that using the manual (or indeed the dictionary) is not, in fact, an easy option for him. Which perhaps takes us back to the disjunction between his father's practical/operational skill and his own lack of communicative/linguistic skills. Perhaps this young man has inherited not only a certain interest in, and operational ability, with technology, but much more precisely, a rather narrow and specifically limited operational form of technological competence.

Family B

This family consists of a husband (Pete) (33), his wife (Trish) (31) and their four children whom we shall call: Debs (9), David (7), Tracey (3) and Connie (2). Pete is a sales and marketing manager for a prestige car sales company. Trish runs a part-time dress hire agency from home. They live in a well cared-for semi-detached house on a busy road in South-West London. They have lived there for four years but have always lived in the neighbourhood. Trish's parents live close by. They both vote Conservative. Pete left school at 17, Trish at 15.

They have three televisions (a colour one in the front room, a 14" colour one in the back room and David (7) has an old black and white one in his bedroom), a video recorder (under the television in the front room), three telephones (one in the front room, one upstairs, and one portable which Pete uses for work) and a telephone answering machine, and a hi-fi unit (also in the front room). There is an Amstrad home computer in the back room. In the kitchen there is a cooker, a washing machine, tumble drier, radio and a microwave, (but no room for a dishwasher: Pete is the 'dishwasher'). Around the house they have a number of walkmans belonging to the elder girls and to Pete (but he does not use it), a compact disc player (in the car), iron and hoover, toys, including a maths 'computer', a coffee maker, and a knitting machine (in the hall).

Their domestic lives, to a considerable extent, are determined by their children and Trish's life in particular is entirely centred around their demands. In this sense they are at a different stage in the family cycle

from Family A. But they differ in another important sense too. The family as a whole is upwardly mobile. While both of them come from working or upper working class families of origin (Trish's mother was and still is a cleaner; Pete's mother now runs and owns a small private hotel at a seaside resort), they are currently comfortably riding the Thatcherite wave of economic prosperity. Pete's current job brings in a substantial salary ('around £30,000') and the private use of a top-of-the-range car, which stands gleaming in the drive-way.

Above all they are consumers. They embrace consumption and express, in an almost exemplary fashion, the ways in which consumption can be used in a family's efforts to define an identity and make a claim for status. They have a high level of disposable income. They buy: designer tracksuits, Habitat furniture, package holidays, toys for the children - and of course technologies. The are connoisseurs of consumption. They are skilled at it. Their working lives (both are selling) and their domestic lives (both are buying) are articulated through consumption. It is this, above all, which defines their relationship to the world in general and to technologies in particular. It is this which provides the core of the family culture. But although consumption is such a high profile activity in this family it is also the case that the activity itself does not enable them to claim the desired social status easily or unproblematically. Their capacity to work with their objects, their success in appropriating them for their own uses in their own ways, and their success in turning their income into social capital, remains limited.

Family systems: internal boundaries:

Internally there are a number of line of cleavage within this family, though the presence of four young children provides a certain degree of fluency and instability within the family structure. One line of cleavage is according to gender identities. Although the family do a great deal together, spend time together in the same rooms, interact both intensely and fragmentarily, during meal-times and in front of the television, there are significant differences in the ways the male and female members of the family associate and identify with each other. Husband and wife have separate social lives. One evening a week, Pete meets his friends from work for a drink, on another Trish goes ten-pin bowling with her parents and other members of her family and friends. To some extent this pattern of socialisation is a function of the age of their children - the lack of evening baby-sitters appearing crucial - (though with parents so close, perhaps this is not such a convincing reason), the pattern appears well established. Pete and Trish will only go out together, without the children, on the few occasions in the year when there is a work associated event, or to go shopping. Gender differentiation and separation is clearly an inherited part of their culture. Within the family itself it is expressed through Trish's close relationship with her eldest daughter (9), whom she treats as a friend, including her in her trips to fashion shows where she buys clothes for her dress hire business, and in other ways. Pete similarly finds ways of involving David (7) in his interests in cars and motor-racing, taking him to race meetings for example.

But the other line of cleavage is around the subsystem which includes Trish and the four children. Pete is outside this, not only because he is

out at work. When he returns and wants to settle in front of the TV, (or listen to the stereo) he feels that he is denied the opportunity to choose what he wants to see or listen to. He believes the children dominate - though Trish believes that Pete controls all the activities in the front room.

Pete returns home from work at about 6 or 6.30 each evening. Before he does Trish's life is dedicated to an endless round of child-care, in looking after the children (and sometimes the children of friends or relatives), washing (the washing machine and dryer in the kitchen are on continuously) cooking, and cleaning:

> Well, I was out most of the day and today I got back at half past two, that's the third lot of washing and second time for the tumble dryer which will obviously be used when that's done. I normally try and do three washes a day, because if I don't the clothes just pile up, really I've got another two, two loads of washing to do, so that would be five today. Then obviously if I change the beds and sheets and things I mean thats sort of four beds and the cots, I mean that's another two, three loads of washing, at the end of every week to do as well. (Trish)

And it is not just the washing machine and the dryer which have become essential to her daily life and are thereby incorporated into the internal culture of the family. The microwave - almost invisible in daily use as she points out - also enables Trish not just to manage the day but to create time and space for the maintenance of the household as an economic, and the family as a social, system:

> I suppose really I use it, I mean doing the diary I didn't realise actually how much I did use it, until I was doing that, I use it every day, sort of at lunch if Terry only wants soup, then I open the tin, stick it in the bowl, and stick it in there to warm it up, rather than using the saucepan as well, just laziness really...Yes, sometimes my husband is home late and obviously

> the children, I don't like them to eat too late, so sometimes, depending on what we are doing in the evening, we will eat about 5 and then I will put Pete's in the oven and then warm it up. (Trish)

Perforce the children define the central focus for family life, and even when Pete comes home, his time and space (as well as his access to his stereo, or his choice of television programme, as we have suggested) appears (at least to him) compromised by the needs and demands of the children. This is a family whose life revolves around the needs of their children and to a considerable extent they devote their energies both to pleasing and to stimulating them. In a way perhaps familiar within an upwardly mobile, and relatively self-made (self-improving) family, the children are seen as an investment in the future - above all as an investment in the future status of the family.

Indeed the information and communication technologies present in the home, particularly the television, the radio, and the computer are mobilised by the children, and on behalf of the children, as a way of defining the internal boundaries, both gendered and age related, within the family. So the television is on much of the day, providing an incessant background noise.

> There's only certain times in the day when I look at it; although it could be on all day; although I don't switch it on. It'll be one of the little 'uns that'll come in, switch it on, and its on [laughs}...first thing in the morning, unless we go out, then it sort of gets switched on, and as soon as they come in it gets switched on...its just background noise to me...only in the evenings, then we'll sit down and watch something, or there are the odd programmes that I like to sit and watch...I'd sooner have the telly on as background noise than the radio. (Trish)

This is because the noise from the TV is less 'distracting', since it is

in another room, and the radio - the radio is Pete's - somehow she cannot control the volume and since it is in the kitchen it is too close, too loud, for comfort. Trish seems to find it easier, as she explains it, to switch herself off rather than switch off the television or the radio. In the ever fragmented world of female domesticity, Trish is a passive recipient of the media oriented decision making of both husband and children.

A great deal of family life takes place in front of the television: meals are eaten; children get dressed and undressed in front of it, but rarely is it attended to, other than in fragments. As Trish says, it is a companion. For her, its live presence symbolises culture; she cannot abide silence. Noise for her is a symbol of a happy family life. The constantly on television does that symbolic work, while it also acts as a child-minder and, in Trish's view, as an educator.

The computer (an Amstrad) was bought for Trish (it was her idea) for her 'to learn how to work it and try programming but then I thought it would be good for the children for educational games and things like that, but it was my idea, so it was my present and I don't use it.' Her fourth child was born soon after, and it quickly became a children's toy, where once again, it is used both as a way of connecting the two elder children: Debs helps David with it; and separating them, as it increasingly becomes his machine. David's position as the only male child is also defined through his toys: his sisters have their Sindy dolls and he his robots, which, of course, are not dolls to him and, he insists, must be seen as 'stronger' than his sisters' equivalents.

But whatever the computer is becoming in this family, in terms of its articulation into the gender based sub-sytems, it is clear that it will not be Trish's. The internal patterning of this family's daily life is, as one would expect, dominated by the number and the ages of the children. The boundaries around sub-systems - around Trish and her children around Trish and her eldest daughter, around Pete and the children - are fluid and permeable. But even with children so young, the information and communication technologies, as well as many of the other domestic technologies, enable the family to survive both economically and socially, for they provide in a number of different ways lifelines to the wider world. They connect both Pete and Trish to work and sources of income. They provide the route through which decisions are made to consume. They are the informers and the educators too. They are expressive of, and incorporated into, the family's culture.

Technologies and the boundary around the family

But what about the external boundaries? How does information and communication technologies enable these to be defined and defended?

We can consider each of the major technologies in turn. The telephone is both a 'lifeline' and threatening: (Debs (9) is not allowed to answer the telephone if she is alone, since her parents are anxious that it may bring her into contact with strangers in the outside world who may threaten her or her family). Yet both parents said it was the one technology they could not do without. For Trish it is a link, a wanted link, between herself and her extended family. It is intensely used. It offers a route

to the world outside the nuclear family. Her mother, for example, will ring her to tell her to watch something on television while she is actually watching it. The telephone also (together with the answerphone) is also her business lifeline. Potential customers ring her, and she works from home. On the other hand, Dave rather resents the phone. He seems much less responsible for the maintenance of the kinship network, and although his phone number at home is often on his company's ads., so customers will from time to time ring him at weekends, he has mixed feelings about it. He has his phone in the car of course, but that has a different status: as a symbol of modernity and as an emblem of his membership of a high-tech world.

The computer also, at least for Pete, marks a boundary between home and work. At work it is imposed but valued; he is aware of its capacity to increase his efficiency and is proud of his mastery of it, but he feels that the computer does not connect him to other people in the way the phone does. At home it has very little place or value for him. Despite his availablility on the phone, he is keen to separate the two domains. Home is for switching off - both literally and metaphorically:

> I don't particularly like using a computer, but I think it is a necessary evil these days...Yes I've got a personal computer, we've got a main computer as well. I've got one on my desk. I've got two in an outer office and another one as well. In fact I've got two phones on my desk, one (is) part of the computer which is my own phone and the switchboard ...I don't like using machines at home. I like to switch off if I can, because it is very hectic during the day. (Pete)

But in a way quite differently from Derek in Family A (but for similar reasons: his experience of technologies at work) Pete is much more

sympathetic at least to some versions of a technological future. He dislikes computers, but is proud of his other technological possessions, particularly his mobile phone and a new miniature television that a customer recently gave him. He is enthusiastic about the radio paging at his company's other office. He can be instantly located through it. It is not seen as threatening, but as part of the most important function of modern technology - communication.

For Trish, however the computer is a link of another sort between the family and the outside world. It is part of her attempt - it is her responsibility - to convert their economic prosperity into the social and cultural capital for the family as a whole and the children in particular (cf. Bourdieu, 1977a). The computer is, as an educational tool, both the means to, and the symbolic expression of, the fulfilment of this desire. Yet her efforts to place her elder children in private nursery schools have so far been frustrated because she has not been able to work out the appropriate times to enter their names. When she has tried she has found them full. The children go to the local primary.

But above all it is the television which mediates this family's boundary with the world outside. Television, in this family, really is akin the 'electronic hearth'. It is a non-threatening, family uniting activity which opens up the outside world to the family while enabling them to be physically closed and enclosed. The children sing advertising jingles learnt from television, they ask for and receive toys seen on television, and there is no attempt to limit the amount they view. Each evening parents and children gather in the room with the television and the

children change into their pyjamas there. The television is also the means for the family to express its powerful consumerist culture. And as such it provides an excellent example of its double articulation within the household culture. Television is consumed as an object. It is also the means for the consumption of objects:

> The TV was a classic. I can get cheap TVs at work; well not cheap but we can get discounts if we buy National Panasonic. But National Panasonic TVs are OK but they tend to be all the same and we went out to look for a TV and we bought that [one] because it has twin speakers...and we liked the look of that, so we bought that, and we probably paid a little bit more for that because its what we wanted. But that was our choice, we chose it because we liked the look of it. (Pete, cf Douglas and Isherwood, 1977, and above)

Choice is of the essence. Choice, and the display of the products of choice, are as Douglas and Isherwood have argued, primary mechanisms for the assertion of identity, for statements about the self. But clearly in this family choice, consumption, has more significance than that. Pete sees his career success as being largely due to to a sophisticated understanding of consumer behaviour. He will read catalogues at home and watch soap operas to see how they feature his company's cars. He is keen on the TV ads. Cable might be taken were it to be available, because of the increased choice it is presumed to offer. They would try it, anyway:

> The thing is, I mean, it doesn't matter how many channels you have you can only watch one, can't you, you can only watch one channel. If you've got a hundred channels you can still only watch one. It just gives you a better choice of what you want. (Pete)

The television provides the opportunities for consumption, for the kids to identify the toys they want and for them to identify new kinds of food (which are not always on the supermarket shelf) (cf Gell on Miller, 1988). Trish will buy what she sees on television:

> We normally buy two packets, so we have something that we normally have and then perhaps the other packets would be whatever they've seen. I'd sooner they tried it. (Trish)

And buying toys from the television is fine (even if they are expensive) if they are seen to have some educational potential.

But yet buying is still shopping, and shopping requires active commitment. It is not easily or acceptably done by mail order, and 'tele-shopping' is not an attractive proposition. Shopping is a sophisticated social and individual activity that requires time and preparation and the exercise of judgement and skill. Consumption is, above all, therefore, a demonstration of skill. Here, once again, is a profound contrast with the perceptions of Family B, for whom 'modern shopping' is something of an anathema.

And it is this dominant domestic (both private and public) culture which defines their attitude to technology and their competence in relation to it. This is a high-technology household in some senses, and Pete, by his own admission, can 'do a little programming'. Even the youngest children turn the television and the video on. But David (9) prefers the snooker table to the computer because 'it is easier', but does spend considerable time with the computer in the front room. There is, in short, little interest in the technology for itself, but for what it represents and what it enables both practically and symbolically. It could be said that in this family ICT is viewed positively (in its double articulation, as both aid to, and object of, consumption) because it serves to maintain the unity and the integrity of the family in its relationship to the world outside the household. It successfully mediates this boundary by bringing

the outside world into the home in a safe and pleasant form.

References

Anderson, B. (1983) Imagined Communities, Verso.

Appadurai, A (   ) 'Introduction: commodities and the politics of value'

Ardener, S. (ed.) Women and Space: ground rules and social maps, Croom Helm

Atkinson, P. (1985) Language, Structure and Reproduction: an introduction to the sociology of Basil Bernstein, Methuen

Baines, S. (1989) 'Approaches to Home Automation', unpublished paper, Centre for Urban Regional Development Studies, Newcastle upon Tyne.

Barthes, R. (1977) 'The rhetoric of the image', in Barthes, R. Image-Music -Text, essays selected and translated by Heath, S. Fontana

Baudrillard, J. (1988) Selected Writings , Poster, M. (ed.) Polity Press

Bausinger, H. (1984) 'Media, Technology and Everyday Life', Media, Culture and Society, Vol.6, No.4.

Bernstein, B. (1971) Class, Codes and Control: theoretical studies towards a sociology of language, Routledge and Kegan Paul

Billig, M. (1987) Arguing and Thinking: a rhetorical approach to social psychology, Cambridge University Press

Boddy, W. (1986) 'The Shining Centre of the Home', in P. Drummond and R. Paterson (eds.) TV in Transition, BFI.

Bott, E. (1957) Family and Social Network, Tavistock

Bourdieu, P. (1972) 'The Berber House' in M. Douglas (ed.) Rules and Meanings, Penguin.

Bourdieu, P. (1977a) Outline of a Theory of Practice, Cambridge University Press

Bourdieu, P. and Passeron, J-C (1977) Reproduction in Education, Society and Culture, Sage

Bourdieu, P. (1984) Distinction, Routledge and Kegan Paul

Brody, G.H. and Stoneman, Z. (1983) 'The Influence of Television Viewing on Family Interaction', Journal of Family Issues, Vol.4. 2. 329-348

Brown, R.H. (1987) Society as text: essays on rhetoric, reason and reality. Chicago University Press

Brunsdon, C. and Morley, D. (1978) Everyday Television: Nationwide, British Film Institute.

Bryce, J. (1987) 'Family Time and TV Use' in T. Lindlof (ed.) Natural Audiences, Sage.

Bush, C.G. (1983) 'Women and the assessment of technology' in J. Rothschild (ed.), Machina Ex Dea, Pergamon Press, NY.

Byng-Hall, J. (1973) 'Family myths used as a defence in conjoint family therapy', British Journal of Medical Psychology, 46, 6-11

Byng-Hall, J. (1982) 'Family legends: their significance for the family therapist', in Bentovim A., Gorell Barnes G. and Cooklin A. (eds) Family Therapy: complementary frameworks of theory and practice, Academic Press

Cardiff, D. and Scannell, P. (1977) 'Broadcasting and national unity' in J. Curran et al (eds.) Impacts and Influences, Methuen.

Cockburn, C. (1985) Machinery of Dominance: Women, Men and Technical Know-How, Pluto.

Cowan, R. Schwartz (1983(1989)) More Work for Mother, Free Associations Books

de Certeau, M. (1984) The Practices of Everyday Life, California University Press

Docherty, D. et al (1987) The Last Picture Show? Britain's changing film audiences, British Film Institute.

Donzelot, J. (1979) The Policing of Families, Hutchinson.

Douglas, M. and Isherwood, B. (1980) The World of Goods: towards an anthropology of consumption, Penguin

Ducrot, O. and Todorov, T. Encyclopedic Dictionary of the Sciences of Language, Blackwell

Dutton, W. Kovaric, P. and Steinfield, C. (1985) 'Computing in the home: a research paradigm', Computers in the Social Sciences 1. 5-18

Dutton, W., Rogers, E. and Jun, S-H. (1987) 'Diffusion and social impact of personal computers', Communication Research, Vol.1.4 2. 219-250

Fiske, J (1987) Television Culture, Methuen

Fletcher, R (1962) The Family and Marriage in Britain, Penguin

Fontaine, J.S. (1988) 'Public or Private? The constitution of the family in anthropological perspective', in International Journal of Moral and Social Studies, Vol.3, No.3.

Frith, S. (1983) 'The pleasures of the hearth' in J. Donald (ed.) Formations of Pleasure, Routledge.

Frykman and Lofgren (1987) The Culture Builders,

Garmarnikov, E. and Purvis, J. (1983) 'Introduction' to E. Gamarnikov et al (eds) The Public and the Private, Heinneman Educational Books.

Garnham, N. (1983) 'Public Service versus the Market' Screen, Vol.24. 1. 6-27

Gell, A. (1988) 'Technology as Magic', Anthropology Today, Vol.4. 2

Gell, A. (1988) 'Anthropology, material culture and consumerism', Journal of the Anthropological Society of Oxford, Vol.19. 1. 43-48

Gershuny, J. (1982) 'Household tasks and the use of time', in Wallman, S. and associates, Living in South London, Gower

Gershuny, J. and Miles I. (1983) The New Service Economy, Frances Pinter

Giddens, A. (1979) Central Problems in Social Theory, Hutchinson.

Glyptis, S. (1987) 'Leisure and the home' paper to ESRC/Leisure Studies seminar, Loughborough University of Technology, December, 1986.

Goldthorpe, J. and Lockwood, D. (1968) The Affluent Worker, (Vols. 1-3), Cambridge University Press.

Gorrell Barnes, G. (1985) 'Systems Theory and Family Therapy' in Rutter, M and Herzov, L. (eds) Modern Child Psychiatry, 2nd ed. 216-229

Gray, A. (1987) 'Behind closed doors: women and video' in H. Baehr and G. Dyer (eds.) Boxed in: Women on and in TV, Routledge.

Gunter B., and Svennevig, M. (1987) Behind and in front of the screen: television and family life, John Libbey.

Haddon, L. (1988) 'The home computer: the making of a consumer electronic', in Science as Culture, 2. 7-51.

Hall, S. (1981) 'Encoding and Decoding the TV message' in S. Hall et al (eds) Culture, Media, Language, Hutchinson.

Haralovich, M. (1988) 'Suburban family sitcoms and consumer product design', in P. Drummond and R. Paterson (eds.) Television and its Audience, British Film Institute.

Harris, C.C. (1969) The Family, George Allen and Unwin

Hartley, J. (1987) 'Invisible fictions: television audiences, paedocracy, pleasure' in Textual Practice, Vol.1, No.2.

Heidegger, M. 'The question concerning technology'

Hirsch, E. (1989) 'Households and the domestic process: some preliminary thoughts on family culture and ICT' CRICT, Brunel University

Hodges, J. and Hussain, A. (1979) 'La police des families' (review article), Ideology and Consciousness, No.6.

Hymes, D. (1972) 'On communicative competence', in J. Pride and J. Holmes (eds.) Sociolinguistics, Penguin.

Jouet, J. (1988) 'The Social uses of micro-computers in France', paper to International Association of Mass Communications Researchers Conference, Barcelona, July 1988.

Jouet, J. and Toussaint, Y. (1987) 'Telematics and the private sphere: the case of the French videotext', paper to Data Communication Conference, Universite Libre de Bruxelles, May, 1987.

Journal of Family Issues (1983) Vol.4 2. Issue devoted to Television and the Family

Jowell, R. Witherspoon, S and Brook, L. (1987) British Social Atttitudes: the 1987 Report, Gower

Keen, B. (1988) ''Play it again Sony': the double life of home video', Science as Culture, 1. 7-42

King, A. (1980) Buildings and Society, Routledge.

Kramarae, C. (1988) Technology and Women's Voices, Routledge.

Lakoff, G. and Johnson, M. (1980) Metaphors We Live By, Chicago University Press

Lindlof, T. (1989) 'New communication media and the Family: practices, functions and effects', in Dervin, B. (ed.) Progress in Communication Sciences Vol.10, Norwood, New Jersey (page refs. from mimeo draft)

Lindlof, T. and Traudt, P. (1983) 'Mediated Communication in Families' in M. Mander (ed.) Communications in Transition, Praeger.

Lull, J. (1989) ed. World Families Watch Television, Sage.

Lyon, David (1988) The Information Society: issues and illusions, Polity Press

MacKenzie, D. and Wajcman, J. (eds.) The Social Shaping of Technology, Open University Press

Maddox, B. (1977) 'Women and the Switchboard' in I. de Sola Pool (ed.) The Social Impact of the Telephone, MIT Press.

Martinet, A. (1969) Elements of General Linguistics, Faber and Faber

Marvin, C. (1988) When Old Technologies Were New: thinking about communications in the late nineteenth century, Oxford University Press

Mayer, M. (1977) 'The telephone and the uses of time', in I. de Sola Pool (ed.) op cit.

McRobbie, A. and Garber, J. (1976), 'Girls and Subcultures' in J. Clarke et al (eds.) Resistance through Rituals.

Miller, D. (1987) Material Culture and Mass Consumption, Blackwell.

Minuchin, S. (1977) Families and Family Therapy, Tavistock

Morley, D. (1986) Family Television, Comedia.

Morley, D. and Silverstone, R. (in press) 'Domestic Communications - Technologies and Meanings', Media, Culture and Society, Jan. 1990.

Moores, S. (1988) 'The Box on the Dresser: Memories of early radio' Media, Culture and Society, Vol.10.

Murdock, G., Hartmann, P. and Gray, P. (1987) 'Home Computers': the social cosntruction of a complex commodity' mimeo, Centre for Mass Communication Research, University of Leicester

Noble, D. (1984) Forces of Production, Alfred A. Knopf (quoted by Keen, op.cit)

Nordenstreng, K. (1972) 'Policy for News Transmission' in D. McQuail (ed.) The Sociology of Mass Communications, Penguin.

Pahl, R.E. (1984) Divisions of Labour, Blackwell

Paterson, R. (1987) Paper to British Film Institute Summer School. July 1987.

Pinch, T. and Bijker, W. (1984) 'The social construction of facts and artefacts: of how the sociology of science and the sociology of technology might benefit each other', Social Studies of Science, Vol.14, 399-441

Pool, I. de Sola (1977) ed. The Social Impact of the Telephone, MIT Press.

Rakow, L. (1988a) 'Gendered technology, Gendered practice' in Critical Studies in Mass Communication, No.5.

Rakow, L. (1988b) 'Women and the telephone: the gendering of a communications technology', in C. Kramarae (ed.) Technology and Women's Voices, Routledge.

Rath, C.D. (1988) 'Live/Life: Television as a generator of events in everyday life', in P. Drummond and R. Paterson (eds.) Television and its Audience, British Film Institute.

Robins, K. and Webster, F. (1987) 'Cybernetic Capitalism: information, technology and everyday life' in Mosco, V. and Wasko, J. (eds.) The Political Economy of Information, University of Wisconsin

Press, Madison

Rogge, J.U. and Jensen, K. (1988) 'Everyday life and TV in W. Germany', in J. Lull (ed.) World Families Watch Television, Sage.

Rothschild, J. (1983) ed. Machina Ex Dea, Pergamon Press, NY.

Saussure, F. de (1974) Course in General Linguistics, Fontana.

Scannell, P. (1988) 'Radio Times: The temporal arrangements of broadcasting in the modern world', in P. Drummond and R. Paterson (eds.) Television and its Audience, British Film Institute.

Silverstone, Roger (1989) 'Let us now return to the murmuring of everyday practices', Theory, Culture and Society, Vol.6. 1. 77-94

Silverstone, Roger (1989) 'Television and Everyday Life: towards an anthropology of the television audience', in Ferguson, M. (ed) Public Communication: the new imperatives, Sage, in press

Skinner, D. (1989)

Skirrow, G. (1986) 'Hellivision: an analysis of video games' in C. McCabe (ed.) High Theory/Low Culture, Manchester University Press.

Spigel, L. (1986) 'Ambiguity and hesitation: Discourses on TV and the housewife in Women's magazines 1948-55', Paper to International Television Studies Conference, London, July, 1986.

Strathern, M. (1987) Dealing with Inequality: analysing gender relations in Melanesia and beyond, Cambridge

Thompson, E.P. (1967) 'Time, work-discipline and industrial capitalism', Past and Present, Vol.38.

Tomlinson, A. (forthcoming, 1989) 'Home fixtures: doing it yourself in a privatised world' in A. Tomlinson (ed.) Consumption, Identity and Style, Comedia/Routledge.

Turkle, S. (1988) 'Computational reticence: why women fear the intimate machine' in C. Kramarae (ed.) Technology and Women's Voices, Routledge.

Walkerdine, V. (1988) The Mastery of Reason: cognitive development and the production of rationality, Routledge.

Wallman, S. (1984) Eight London Households, Tavistock

Young, Michael and Wilmott, Peter (1973) The Symmetrical Family, Routledge and Kegan Paul

Zaretsky, E. (1976) Capitalism, the family and personal life, Pluto Press.

Zimmerman, J. (1981) 'Technology and the future of women', in Women's

<u>Studies International Quarterly</u>, Vol.4, No.3.