



ITC Research

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**WATCHING PEOPLE WATCHING TELEVISION :  
WHAT GOES ON IN FRONT OF THE TV SET ?**

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### **Abstract**

This paper reports an observational study of families watching television in their own homes. Observational data were collected via a video camera housed within a special television cabinet placed in six family households. Results show that family members were absent for substantial proportions of the time the television set was in operation, and even when present did not pay full attention to the screen for more than a minority proportion of that time. Families and family members varied significantly in respect of certain patterns of television watching, but were similar in other respects. The results have implications for understanding the nature of television viewing in the natural viewing environment. Recommendations are offered for further analysis of these data.

## Introduction

The accurate and valid measurement of television viewing has posed a fundamental problem for media research for nearly half a century. In the commercial broadcasting sphere especially, audience measurement data represent a vital currency central to the sale of advertising, programme planning and scheduling, and the assessment of a television station's or channel's performance. In the academic research sphere, being able to measure viewing behaviour is important because so often statements about supposed effects of television on public attitudes and behaviour rest on associations between respondents' own reports of how much television they watch or which programmes they watch, and personally stated opinions or modes of conduct. Inaccurate measurement of such behaviour therefore could call into question the validity of such media effects research.

Television viewing, however, is a complex activity involving a diverse array of psychological processes. Anderson and Field (1991) have provided a cogent statement about viewing behaviour which neatly encapsulates its psychological composition: "Watching TV requires decision processes that lead a person to enter the viewing area and to be exposed to TV programming. Watching TV involves overt and covert attentional activities including accommodating to or ignoring a distracting viewing environment. Watching TV requires comprehension strategies of considerable complexity. Watching TV means choosing programming and eventually deciding to stop watching" (p. 199).

Anderson and Burns (1991) draw attention to the distinction between "on-line" and "off-line" measurement of television viewing. "Off-line" research is that which characterizes the kind of measurement typically employed by the television industry in relation to daily decision making about programming and advertising performance and strategy. So-called because information is obtained from viewers who are generally questioned about their viewing not at a time when they are actually watching television, "off-line" research has been queried in terms of its accuracy and validity. Self-report techniques involving questionnaires, interviews by telephone or viewing diaries can yield poor estimates of actual viewing behaviour (Bechtel, Akers and Achelpohl and Akers 1972). Anderson, Alwitt, Lorch and Levin (1979) found that parents consistently estimated greater amounts of viewing by their children when a programme list method was used as compared to a measure based on estimated hours their children watched in the morning, afternoon and evening of each day of a week.

"On-line" measures are characterised by more continuous and active monitoring of viewing behaviour while it takes place. Such techniques are believed by some researchers to provide a more accurate appraisal of the nature of television viewing (Anderson and Field, 1991).

### Off-line measures

Historically, television audience measurement has relied upon self-report data provided by respondents in one-off survey

samples or retained viewing panels, using either questionnaire or more usually, diary methodologies. In such research, viewers are invited to supply data either from memory about how much or what they watched over a specified period of time, or vigilantly to catalogue their viewing experiences as they happen.

The central problem is that the validity "off-line" instruments is usually unknown. In a viewing diary, for example, viewers are asked to check off either time intervals or listed programmes when they were watching. Evidence from a number of sources has indicated that such diaries may not be wholly accurate, or at least fail to yield reliable data across a sample of viewers (Bechtel et al, 1972; Collett and Lamb, 1986) . A further problem with "off-line" measures is that while they may provide reasonable estimates of behaviours of which respondents have some conscious awareness, the same may not be true of their responses to television of which they are less routinely aware, such as, for instance, level of attention to a programme while viewing (Anderson and Field, 1991). Another related problem is that questions employed in some "off-line" instruments require interpretation by the respondent. Not all respondents may place the same interpretation on the questions being asked and thus the instrument may give widely varying estimates of the same viewing behaviour, which having little to do with its actual nature. (Anderson and Field, 1983).

More recently, audience research techniques have become increasingly sophisticated with the development of new audience measurement technologies. In the United Kingdom, most of the rest of western Europe, in North America, and in other parts of the world, television audience measurement these days is increasingly based on electronic data-gathering techniques. The paper-and-pencil diary method of encoding viewing behaviour, for example, is being replaced by the "people meter", a device which looks like a remote control unit, through which respondents in dedicated viewing panel households press buttons to register the time periods they are watching television. Or at least, that is what the system is supposed to do!

In actual fact, both paper-and-pencil and electronic diary techniques register that the respondent was apparently present in the same room as the television when the set was switched on. The act of indicating via pressing a button on his/her "people meter" device that the respondent is in the viewing room with the television set switched on, does not necessarily mean that the respondent is actually looking at or in any other way paying attention to what the set is showing.

Although the standard audience measurement techniques have been accepted as providing an adequate currency for commercial research purposes and as offering data sufficiently indicative of viewing experiences in many academic mass media studies, there is nevertheless a legitimate reason to question how accurate and reliable these operational definitions of television viewing really are. If our understanding of the viewing experience **per se** is to improve, and through this enhanced knowledge better research designs emerge for the study of other media issues, then it is worth questioning just how representative of viewing

behaviour are the data generated by the usual measurement techniques.

Social scientists interested in the study of human behaviour have given increasing emphasis to the need for greater ecological validity in the way behaviour is examined and measured (Argyle, Furnham & Graham, 1981; Forgas, 1979). It is important to investigate how people behave in their natural habitats in their normal everyday lives. Recently, this message has been underlined by a number of writers specifically in relation to the study of television viewing (see Ang, 1991; Lull, 1990). One way of doing this is to observe directly any behaviour in which one is interested rather than relying on the self-generated reports of individuals themselves. The latter forms of data can be unreliable since people suffer memory lapses or simply fail to pay close attention to everything they are doing and to how much time has passed.

In the context of television viewing research, there have been several attempts to utilise observational techniques to study the nature of viewing behaviour. Some of these techniques have involved an observer being present in a family household trying to be as unobtrusive as possible in recording how the members of the family behave around the television set (e.g., Lull, 1982; Morley, 1986). The problem with this methodology is that having another person (and complete stranger) watching their every move and listening to their every word changes the natural home environment into one that is not normal. Natural behaviour, even in participants' own homes, is therefore less likely to occur. Even so, such observational data have provided some interesting insights into the way the television set is used.

Another observational technique has been experimented with in which the human observer is replaced by an "electronic eye". Still photographic, film or video cameras have been installed in homes to observe what goes on in front of the main television set. Such equipment is generally activated by the set being switched on.

Early studies were restricted by the technology available. One of the first attempts to study in-home viewing behaviour used a time lapse camera technique which took still pictures of events in front of the television set every few seconds or minutes (Allen, 1965). This technique was limited in the extent to which it could examine the relationship between verbal and non-verbal activities of viewers and events on the screen because of the way in which observational data were collected. Another study which had the added advantage of capturing continuous moving film footage of viewing behaviour, nevertheless used cumbersome equipment with the camera placed outside the television set and cables trailing from both camera and set through the household to a control vehicle parked outside the home (Bechtel, et al, 1972).

More recently, another study using a time lapse technique, but with a video camera, conducted a detailed analysis of relationships between visual attention to the screen and on-screen events (Anderson et al, 1985). The latter, however, focused on children's viewing behaviour in testing hypotheses

about the nature of children's comprehension of television programmes.

Further research of this kind has been carried out in the United Kingdom. In a study funded by the Independent Broadcasting Authority, Collett and Lamb (1986) developed a new piece of equipment which comprised a television set that housed a video camera and two video recorders. The camera fed one VCR and the set fed the other VCR. Whenever the set was switched on, the camera was activated and both events in front of the set and on screen were simultaneously recorded. These researchers studied 20 family households using the equipment and were able to provide some interesting observational evidence of behaviour in front of the television. Comparisons were also made between observational viewing data and self-reported diary measures of viewing from the same households.

Subsequently, the IBA in the United Kingdom developed a further, similar piece of equipment to continue this research with six further households. This research was described in general terms to the marketing and advertising industry in the UK (Svennevig, 1987; Svennevig & Wynberg, 1986), but until recently no detailed analysis was conducted of its observational data.

These observational studies have begun to provide a number of interesting insights into the nature of television viewing which "off-line" methods fail to reveal. Allen (1965) reported either no audience or an inattentive audience during 52 per cent of set-in-use time in the morning, 47 per cent in the afternoon, and 35 per cent at night. During commercials, these figures were even worse, respectively 58 per cent, 54 per cent, and 43 per cent.

These results were corroborated a few years later by Bechtel et al, (1972) who provided a more detailed assessment of attention to television for different programme types. Movies were found to be the most watched type of programme; 76 per cent of the time a movie was on, at least one person was looking at it. Attention levels observed for other programme types were as follows: children's programmes (71 per cent); suspense series (68 per cent); religious programmes (67 per cent); family series (66 per cent); game shows (66 per cent); talk shows (64 per cent); melodramas (59 per cent); sports events (59 per cent); news (55 per cent); and commercials (55 per cent). Children attended most to children's programmes (86 per cent) and least to melodrama and sports (eight per cent). Adults looked most at movies (78 per cent) and least at commercials (52 per cent). The net impression was that viewers did not look at television all the time it was on.

This kind of "on-line" research approach enables a closer examination of how people look at television. As was noted earlier, "off-line" measures, especially those used by the television industry really only measure presence in the room with the television set switched on. In assessing the potential impact of television, however, it is important to know more about how attentive viewers are to the programmes or commercials being shown. Visual attention of viewers has been of interest to mass communications researchers for many years. It has tended to be investigated in two ways - visual orientation and visual fixation

(Anderson and Burns, 1991).

Visual orientation is defined as head and eyes oriented toward the television screen. Visual fixation is defined as the relatively precise location on the screen toward which the eyes are directed. Visual orientation is far more easily measured than visual fixation, and consequently has tended to be far more commonly deployed. It is usually referred to as "looking". It is the type of measure used in the study reported in this paper.

### **New Research**

The IBA study obtained a large volume of observational data on videotape, but the original analysis performed only a superficial examination of these data. Some impressionistic information was obtained from the database about the extent to which people were present in the room when their television set was switched on and about the degree of attention they were apparently paying to the screen. This paper reports the findings of a more detailed and systematic analysis of these data.

Specifically, the following questions will be addressed:

- (1) For what proportion of observed set switched on time are viewers present or absent?
- (2) For what proportion of observed viewing time while viewers are present are they paying visual attention to the screen?
- (3) Is there any evidence that degree of visual attention to the screen varies systematically and significantly with the type of programme being shown?
- (4) What else is happening in front of the set apart from viewing? Viewing may be the primary activity for those seated in front of the screen, or it may be shared with other ongoing activities.

This research was not originally designed to test any specific theory about television viewing. It was set up by a broadcasting regulatory body interested in exploring the potential of observational methods in investigating the nature of family viewing behaviour. As such it represented one of a series of IBA-funded studies of television and the family conducted in the mid-1980s, some of which used participant observation techniques (e.g., Morley, 1986). The observational research reported in this paper was the second camera-in-the-TV-set study funded by the IBA. The first study was carried out by Collett and Lamb (1986), based at the University of Oxford. This second study was carried out on a smaller scale by the IBA and supervised directly by the IBA's in-house research staff. Previously its findings were referred to in scattered media trades press articles and industry conference presentations. This paper represents the first systematic analysis of the data. This initial analysis is restricted to a descriptive assessment of the findings which attempts to provide some shape to the viewing attributes upon which observational data were collected. It is intended that more sophisticated and dynamic statistical analysis will be

computed in due course which will explore relationships between key variables in greater detail.

## **Methodology**

The study involved a content analysis of observational data held on videotape comprising recordings of families watching television and of the programmes they watched.

### The Equipment

The equipment comprised a television cabinet which housed a television set, video camera and two video recorders (VHS format). The cabinet was placed in the main viewing room of the house and was operated in the same way as a standard television set. A remote control device was supplied with the equipment which could be used to switch the set on and off, and to change channels. Whenever the set was switched on, the equipment was activated. A continuous recording was made via the video camera of all activity in camera shot in front of the television set and taped on VCR. In addition any material being shown on screen was automatically captured via a direct feed into a second VCR. The equipment was placed with each household for between two and four days.

Four-hour videotapes were used with the VCRs played at half recording speed to enable eight hours of observation time to be captured by each tape.

Observational data of viewers watching television were coded in 30-second units. A record was made of who was present in front of the screen, degree of visual attention to the screen, performance of other activities and use of the remote control device. These observations were cross-referenced with data on types of programmes being shown at the time and the channel on which they were being played. Recordings were also coded by date and clock time.

### The Sample

The equipment was placed with six families who were recruited by a market research company (The Research Business) on behalf of the IBA. All the families were lower middle class and consisted of a mother, father, and between one and four children. Two of the families had two children, three had three children, and one had four children. During the periods of observation two of the households had two visitors each and two others had one visitor each whose behaviour in front of the television screen was coded. In total, therefore, observational data were coded for 29 family members (12 adults and 17 children) and for six adult guests.

### Coding and Analysis

For coding purposes, all observed time was divided into 30-second time units. In total, 230 hours of videotape were produced containing observational data of viewers watching television and recordings of the programmes they watched.

Time was recorded at the start of the recording session which was initiated by the television set being switched on, at the time when the set was switched off and when either of the following occurred:

- i) every time the channel was changed
- ii) every time the television material changed  
(e.g., programmes, advertisements, announcements and programme trailers or promotions)

As just indicated, television material was split into three broad categories: Programmes, Advertisements, and Announcements/Trailers/Promotions for Programmes. For Programmes, start time was measured from the beginning of the opening music sequence. Likewise, finish time was recorded after the music/credits had ended. An attempt was made to identify the programme by name. If this was not possible, a brief description was noted of the programme so that it could be categorised subsequently by 'programme type'. Advertisements were identified by the product being advertised. Announcements/Trailers/Promotions for programmes included previews of what was going to be on later in the schedule, notice of the next programme coming up, the television station's logo, and any information given at the end of a programme (e.g., about support material or publications related to the programme).

Television material was comprehensively broken down into a number of more specific and detailed categories:

- (1) Soap opera (UK, US, other)
- (2) Wild Life/Nature
- (3) News/Current Affairs
- (4) Sport
- (5) Religion
- (6) Royalty
- (7) Crime Drama
- (8) Thrillers
- (9) Serious Music
- (10) Popular Music
- (11) Chat Shows
- (12) Quiz/Game Shows/Variety Shows
- (13) Documentaries
- (14) Children's Programmes
- (15) Miscellaneous
- (16) Trailers
- (17) Advertisements

The videotapes were all documented according to the following method. At the top of each record sheet, the date, tape identity, page number and specific family were noted at the start of every viewing session. The television switched-on time was recorded and if it was possible to determine which channel was being broadcast, the channel was noted. Often this was not immediately possible and instead a brief description of the programme was provided. This description was later used when allocating the programme type codes. The video was then allowed

to run until either a change in programme or a channel change occurred. Whenever a change in what was being watched on-screen occurred, the time was recorded and the new programme/channel information noted. Since the 'time' with which this research was concerned was television switched-on time, and families often watched in sessions spread across the day, there were often breaks of up to a few hours between one observational period and another in terms of real clock time.

In addition to coding the material appearing on screen during television switched-on spells, behaviour occurring in front of the screen during those spells was also coded. A coding sheet was devised on which a number of different kinds of information were coded: the family being observed, the date, tape number and coding sheet number.

The variables under investigation were the total viewing time, the channel/programmes being watched, the number of different people present in the room (mother, father, children, visitors) and the different behaviours they displayed. Behavioural measures were divided into presence in the room (P), television watching (W), activities (A), conversation (C) and posture (P).

Presence (P) was divided into three levels: Full (1), Partial (2) and Not at all (3). The numbers were used on the coding sheets to indicate the level of presence for that particular viewer. Full presence, within a 30-second interval, was determined by the viewer being in the room for 99% to 100% of that period. Partial presence represented 10% to 98% of the time in the room. Calculating this measurement was made much easier by an electronic auditory beep which broke down the observation time into 10-second intervals which provided some structure to the observation period. The Not at all category was allocated when a viewer was present for less than 9% of the time.

There were occasions when the viewer was out of camera shot, but was known still to be in the room since they had not been seen exiting. In this instance, the viewer was coded as out of view (4). With out of view codes it was not possible to make any judgements about any of the other behavioural measures which were coded in this research.

Watching signified looking at the television screen. This indicated that the viewer appeared to be looking at the screen, which is to be distinguished from actually paying full attention to it. As with Presence, Watching was divided into Full (1), Partial (2) and Not at all (3). A fourth category of out of view (4) was also used. The definitions used for these categories were in terms of percentage of 30-second time intervals in the same way as with Presence.

Activity measures incorporated three styles of viewing: Pure TV watching (where the primary activity was viewing), intermittent TV watching whilst also doing something else (TV viewing as shared activity), and doing something else while the television is on (TV viewing as secondary activity). In total, there were 14 activities that took place in front of the television screen. These were as follows:

- (0) No activity
- (1) Reading (Books, Newspapers, Magazines, etc)
- (2) Writing/Drawing
- (3) Eating/Drinking
- (4) Cleaning
- (5) Ironing
- (6) Sewing/Knitting
- (7) Sleeping
- (8) Playing games (structured or imaginary)
- (9) Dressing/Undressing
- (10) Wandering around the room
- (12) Breast feeding/Bottle feeding
- (13) Attending to baby
- (14) Smoking
- (11) Other unclassifiable activities

Conversation (C) included various vocal sounds such as talking, laughing, crying/shouting and baby babble. At the outset, Conversation was divided into Television-related (R, coded 1) and Television-unrelated (U, coded 2). It quickly became apparent that most of the conversations were unclear and thus an Unclear category was created (0) which also included laughter, crying/shouting and baby noises. A fourth category of No conversation (coded 3) was added during the data coding stage.

Posture (P) comprised the position viewers adopted in front of the television set. There were three principal categories here: Standing/walking around (1), Sitting, either on a chair or on the floor (2) and Lying down on the floor or sofa (3). Posture was also to some extent linked to Active and passive viewing. The former was characterized, for example, by interaction on the part of the viewer with the television, such as talking to it, laughing at things in programmes, and responding to it (e.g., trying to answer questions in quiz shows). Passive viewing was often characterized by sitting, slumping or lying in front of the television and showing no signs of interaction.

Zapping (changing channel) (C/C) was recorded for each viewer within each 30-second interval.

## Results

### Observational Periods

The amount of observational data collected varied from family to family, ranging from a minimum of three hours five and a half minutes to eight hours and six minutes (see Table 1). This meant that the number of codable time units (30-seconds each) per family varied as well, ranging from 371 to 969.

Table 1 here

### Presence in front of TV set

The first basic measure was that of percentage of total observed time that family members were present in front of the television set while it was switched on. Averaging over all family members

of the six members, participants were present in front of the set either fully or partially for somewhat over 40% of the observed time. For well over half the observed time, there was no one present in front of the television set while it was switched on (see Table 2).

**Table 2 here**

Presence in front of the set while it was switched on varied between families. The proportion of total observed time that the set was playing to an empty room varied from a minimum of 28% to a maximum of 72%. Full presence in the room varied from a minimum of 21% to a maximum of 64%.

There were variations also between the amount of presence in the television viewing room of different family members. The mother in the family spent the greatest proportion of observed time fully present (42%), followed by the father (39%) and finally the children (34%). Once again, though, there was considerable variation in this pattern between different families.

Looking at the TV Set

The second important measure was the extent to which family members actually looked at the set while it was on. Taken as a proportion of time present in the television viewing room, family members in the six families spent around 60% of the time looking at least partially at the screen, and a little over a quarter of the time not looking (26%). For the remainder of the observed time, family members were out of view of the camera.

Mothers spent a greater proportion of presence time looking at the screen than any other family member (67%), followed by fathers (65%) and finally children (49%).

Across the families, full or partial attention to the screen varied between 50% and 67% of time present (see Table 3).

**Table 3 here**

Distribution of TV-on Time among TV Channels

The proportion of TV-on time which was occupied by different television channels is shown in Table 4. The greatest proportion of TV-on time was tuned to ITV, followed by BBC1 and then the two minor channels - BBC2 and Channel 4. The families observed here were heavier watchers of ITV than the national average, and lighter users of BBC2 and Channel 4. Nearly three per cent of TV-on time was taken up by channel zapping.

There was considerable variation between families, not just in the proportion of TV-on time for which the set was tuned to particular television channels, but also in relation to the amount of time spent grazing through available channels.

**Table 4 here**

### Distribution of Presence and Viewing Among TV Channels

Having established the amount of time the TV set was tuned into different TV channels, it was important next to examine the extent to which family members were present in front of the set and were looking at the screen when different TV channels were playing. The results are summarized in Table 5 which splits both Presence and Looking into three categories: "Full", "Partial" and "Not at all".

For mothers, fathers and children, the greatest proportion of "full presence" time occurred when the set was tuned to ITV, followed by BBC1. These are the two major TV channels which customarily achieve the largest audience shares. BBC2 and Channel 4 were much less likely to be tuned into when family members were present.

The greatest proportions of looking-at-the-screen time were allocated to BBC1 and ITV. BBC1 was especially likely to be watched by mothers, while ITV viewing was more popular among fathers and especially children. The fact that ITV and BBC1 featured most prominently even when family members were not looking at the screen indicated that the TV set remained tuned to these two channels most often, even though the families were not paying particularly close attention to the television.

Table 5 here

### Distribution of TV on Time among Programme Types

The proportion of television switched-on time that was occupied by different programme types was calculated for each family. Over all families, the programme type switched to proportionately more often than anything else was children's programmes, followed by thriller dramas and quiz shows (see Table 6).

There were clearcut differences between families, with some being relatively heavy drama and entertainment viewers and others being more likely to be tuned to more serious news and other factual programming.

Table 6 here

### Distribution of Time Present in Front of Set across different Programme Types

Table 7 shows how presence in the room with the TV switched on was distributed across various programme types. Results are presented for mothers, fathers, children and all family members combined. Full presence, across all family members occurred principally when children's programmes, thrillers, and quiz shows were being shown. These programme categories also featured prominently under partial presence, signifying that these were the most commonly tuned into programme types during the period

of observation.

There were some differences among family members in terms of presence by programme type. Children were, not surprisingly, especially likely to be present, both fully and partially, when children's programmes were being shown. They were more likely to be accompanied by their mothers than their fathers when these programmes were being shown. Fathers were more likely than mothers or children to be fully present when news and current affairs programmes were being shown.

**Table 7 here**

Distribution of Time Spent Looking at the Screen across Different Programme types

Out of the time family members were present in the room with the television switched on, to what extent were they actually looking at the TV screen? This question was addressed next. Table 8 summarizes the results for looking at the screen for mothers, fathers, children and over all family members.

The programme types which occupied the greatest proportions of time spent looking at the screen were thriller drama, quiz shows, children's programmes and the news. This analysis does not necessarily demonstrate that these were the programme types which held viewers' attention the most. In fact, given that these programme types occupied the greatest amount of output during observed time, it is not surprising that they were also the types for which family members were most likely to be present and most likely to be looking at.

Thriller drama programmes were especially likely to be showing when fathers were paying attention to the screen, more so than was true for mothers or children. Children's observed looking time was occupied to the greatest extent by children's programmes. Mothers were also found to devote a greater part of their visual attention time to children's programmes than did fathers. Fathers spent the greatest proportion of observed looking time watching news and current affairs programmes of any family members. Children devoted a greater proportion of observed looking time to crime-drama than did their parents.

**Table 8 here**

Level of Visual Attention to each Programme Type

Another way of examining looking at the screen behaviour is to measure the level of visual attention devoted to different programme types. The previous analysis assessed the distribution of programme types over total observed looking time. The latter is, of course, associated with the amount of each type of programme that was shown during the observation period. Some programme types were far more prominent than others on the channels to which families kept their sets tuned during the observation periods. Regardless of how much of each programme type was shown, however, was there any evidence that some types

of programming held visual attention better than others when they were being watched?

Findings presented in Table 9 suggest that programmes did vary in the level of visual attention they received from the observed families. The percentages given in this table indicate the proportion of programme running time during which family members were present for which each programme type received full, partial or no visual attention. On this evidence, religious programmes received the highest level of full attention from these observed families. Caution is needed when interpreting this finding, however, because religious material occupied only one tenth of one per cent of programme running time during the total observed period across all families. This visual attention effect may therefore be specific to the single programme exemplar in this category upon which this finding is based.

Across other more full represented programme types, visual attention over family members in general was greatest in respect of documentaries, news, sport and crime-drama. Mothers were especially visually attentive to documentaries. Fathers were most visually attentive to documentaries, news and dramatic thrillers. Children were most visually attentive to crime-drama programmes, serious music programmes (again a tiny category during the observed period), sport and children's programmes.

Table 9 here

#### Other Activities in Front of the TV Set

Observational data on the families while watching television were also classified in terms of other activities performed by members of the household while present in front of the TV set. Table 10 presents the break down of activities for the mother and father of each family, and Table 11 presents similar data for children. The childrens data are averaged over all the children in each family.

The coding identified 13 specific categories of activity: reading, writing, eating, cleaning, ironing, sewing, sleeping, playing, dressing, walking about, breast feeding, changing children's nappies, and smoking. There was also an 'other' category containing a miscellany of additional activities none of which could be comfortably included in the other categories, and finally a 'no activity' category.

On average across the six families, the mother exhibited no specific additional activity while present in front of the TV set for over one-third of the time, and the father for nearly one-half of the time. Specific activities most commonplace for mothers were eating, reading and breast feeding. For fathers, the most usual activities were eating and walking about in front of the TV set.

Table 10 here

Children exhibited no specific activity other than watching while in front of the set for over 40 per cent of the time they were

observed. The most popular activities observed here for children were wandering around, playing and eating.

Table 11 here

#### Conversation in Front of the TV Set

The families were coded for the amount of conversation that took place in front of the TV set and an attempt was made to assess how much of that talk could be related to whatever was being shown on the television at the time. In other words, was the conversation TV-related or TV-unrelated. The results are summarised for mothers, fathers, children and over all family members in Table 12.

It is clear that the overwhelming proportion of time that family members were observed in front of the TV set, no conversation was taking place. Indeed, over all families and family members, there was conversation on average for about 15 per cent of the time individuals were observed. The children were most likely to be talking while in the presence of the TV set and mothers were the least likely to be engaged in conversation.

Much of the conversation could not be clearly identified as either TV-related or TV-unrelated. Of that conversation which could be labelled, most was TV-related.

Table 12 here

#### Position in Front of the TV Set

Position in front of the TV set was categorized in three ways as standing, sitting or lying down. Table 13 summarizes the results for this assessment. The most popular position for watching television was sitting down. This was true of all family members. The second most likely position was standing up in front of the set. This was most popularly the case for children. Lying down was the third most observed viewing position, again more likely to occur among children than among their parents.

Table 13 here

#### **Discussion**

The current research extends a handful of previous studies of the same type in examining the nature of television viewing behaviour as it happens. A small number of families were observed via a video camera contained within a television cabinet while the watched television in their own homes. Observational data were coded to provide measures of the amount of time family members spent in the television viewing room while the set was switched on, the proportion of presence with set time spent actually looking at the screen, and the distribution of television playing time among different programme types.

It would, of course, be unwise to generalise liberally from the current findings to any wider viewing population given the small size of the sample. Moreover, all the participants in this study were from family households where at least two parents and two children were present. Observed viewing behaviour might have been different in single-person households, households with two adults and no children, households with several adults sharing, and so on. The strength of this study lies in its ability to facilitate an in-depth observational analysis of real-time viewing behaviour in a natural environment.

This initial descriptive analysis of observational data of people watching television obtained through a video camera hidden inside their television set has begun to reveal some interesting findings about the nature of actual viewing behaviour. Although not always strictly comparable measures were used, some findings have emerged which offer support to earlier work, mostly conducted in the United States, of the same kind.

The evidence produced here indicates that viewers pay far from unbroken attention to the television once it is switched on. Among the small sample of families observed in this study, there was no one even present in the viewing room for over half of the observed time. Even when family members were present when the set was switched on, they did not look at the screen all the time. These results corroborate the findings of earlier observational research (Allen, 1965,; Bechtel et al, 1972; Anderson and Field, 1983).

Distribution of television signal tuning time and viewing time across the mainstream television channels in the UK reflected established viewing shares for these channels. ITV and BBC1 attracted the greatest proportion of viewing time and, indeed, the set was tuned to these channels for most of the time regardless of whether viewers were present or not.

The distribution of set switched-on time, presence in front of the set time and looking at the screen time also varied with the type of programme being shown. Looking at different types of programmes was measured in two ways. The first method was to examine the proportion of total looking time occupied by programmes of different types. This was, of course, influenced by the amount of each type of programme available to be watched. A second method was to measure the level of visual attention or looking devoted to each programme type when it was being watched, which was quite independent of how much programming of that type may have been available or watched in total across the observational period.

The programme types occupying the greatest proportions of time spent looking at the screen were thriller drama, quiz shows, children's programmes and the news. The presence of children's programmes on this list was inflated by their apparent popularity among children.

The level of visual attention was greatest for factual programmes such as news, documentaries and religion. Sport and crime-drama also emerged as being among the programmes most likely to attract

visual attention to the screen. Even among these programmes, however, looking behaviour was far from continuous and viewers were looking away from the screen for substantial proportions of the time such programmes were being watched. Once again, these findings supported previous observational analyses in a general sense. Indeed, there are some specific similarities with Bechtel et al's findings at least with regard to certain programme types which emerged as attracting the most visual attention. Notably, the appearance of children's programmes and suspense series (similar to this study's crime-dramas), religious programmes and game/quiz shows high in the rank order of programmes most looked at are clear similarities even though precise measures of looking are not the same. The current study, in line with Bechtel et al (1972), also found that children paid the greatest visual attention to children's programmes.

Further analyses revealed that families perform a host of activities in front of the television set in addition to viewing. Eating, reading and, in the case of children, playing were the most commonly observed activities apart from viewing. Although no specific alternative activity to viewing was observed for 30-40 per cent of the time, a clear picture emerged that for a considerable portion of set-on time, viewing is not consistently the primary activity when family members are present in the viewing room.

An attempt was made to code conversation in front of the screen but indicated little television-related talk. However, poor sound quality meant that much of the talk could not be readily identified. Finally, a brief analysis of position in front of the television set showed that family members generally watched television from a sitting position, though some of their viewing time was spent standing up or lying down.

This research has raised as many questions as it has answered. The consistency between some of the key results found here and those reported by earlier observational studies using similar technology is promising. The current analysis has been restricted, however, to description of viewing behaviour and other behaviour in front of the television set. There remain important questions concerning relationships between the various behaviours observed. It will also be important to try to explain these behaviours. In particular, variations in degree of looking at the screen with the type of programme being shown begs the question of whether particular content or format attributes are specifically and systematically linked with visual attention. Anderson and Field (1983) reported that the distribution of look lengths can be highly skewed such that most look lengths are of relatively brief duration, with extended looks of greater than one minute's duration being relatively infrequent. A viewer could have a few very long looks intermixed with a relatively large number of short looks. This level of analysis is possible, but has yet to be carried out on the data reported in this paper.

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TABLE 1 PERIODS OF OBSERVATION PER FAMILY

	Hours	Minutes	Coded Time Units
Family 1	3	14½	389
Family 2	3	5½	371
Family 3	8	4½	969
Family 4	5	4	608
Family 5	4	2	484
Family 6	8	6	854

TABLE 2 PERCENTAGE OF TOTAL OBSERVED TIME SPENT IN PRESENCE OF TELEVISION SET

	Families						Mean %
	1 %	2 %	3 %	4 %	5 %	6 %	
<u>Mother</u>							
Full	17	59	44	32	73	27	42
Partial	1	7	5	4	6	5	5
Not at all	82	34	51	64	21	69	53
Out of view	1	*	-	-	*	*	*
<u>Father</u>							
Full	29	19	46	20	74	43	39
Partial	4	1	9	12	7	4	6
Not at all	63	76	44	67	15	52	53
Out of view	4	3	1	2	4	1	2
<u>Children</u>							
Full	22	28	66	11	46	32	34
Partial	3	6	3	1	5	16	6
Not at all	72	65	30	86	49	64	60
Out of view	3	*	1	2	1	2	1
<u>All</u>							
Full	23	36	52	21	64	34	38
Partial	3	5	6	6	6	8	5
Not at all	72	58	42	72	28	62	56
Out of view	3	1	1	1	2	1	1

Note: \* Less than 0.5 per cent

TABLE 3 PERCENTAGE OF TIME PRESENT IN ROOM SPENT LOOKING AT TELEVISION SCREEN

	Families						Mean %
	1 %	2 %	3 %	4 %	5 %	6 %	
<u>Mother</u>							
Full	28	44	22	32	55	8	32
Partial	46	31	50	43	16	25	35
Not at all	12	24	23	19	13	48	23
Out of view	13	1	4	5	16	19	10
<u>Father</u>							
Full	51	25	18	5	26	57	31
Partial	25	24	40	56	26	38	35
Not at all	19	40	11	13	14	6	17
Out of view	5	12	13	26	35	*	16
<u>Children</u>							
Full	27	19	39	42	10	20	26
Partial	29	23	30	21	16	17	23
Not at all	23	41	11	32	20	55	30
Out of view	22	18	26	6	53	13	22
<u>All</u>							
Full	35	29	27	26	30	28	29
Partial	33	26	40	40	20	26	31
Not at all	18	52	15	21	16	36	26
Out of view	13	10	14	12	35	11	15

Note: \* Less than 0.5 per cent

**TABLE 4 DISTRIBUTION OF TELEVISION-ON TIME ACROSS MAINSTREAM TELEVISION CHANNELS**

	Families						Average %
	1 %	2 %	3 %	4 %	5 %	6 %	
BBC1	12	40	31	23	28	68	34
BBC2	22	2	*	5	7	1	6
ITV	60	29	56	69	61	29	51
Channel 4	2	27	2	-	1	1	6
Zapping	4	2	6	2	3	*	3

- Note:
1. Percentages show proportion of total TV switched-on time that set was tuned to different TV channels
  2. Zapping refers to instances where more than two channel changes were made in any one unit of observation time (30 second interval)
- \* Less than 0.5 per cent

**Table 5 CHANNEL DISTRIBUTION AS A PERCENTAGE OF TIME PRESENT WITH TV SWITCHED ON AND TIME SPENT LOOKING AT THE TV SCREEN**

	Presence			Looking at Screen		
	Full Presence %	Partial Presence %	Not present %	Full %	Partial %	Not at all %
<b>Mother</b>						
BBC1	39	47	28	43	28	34
BBC2	3	4	8	2	4	5
ITV	45	42	61	33	55	56
Channel 4	9	*	0	18	7	1
Zapping	3	6	3	3	5	3
<b>Father</b>						
BBC1	37	27	31	30	33	35
BBC2	8	5	3	14	5	3
ITV	48	55	58	49	49	58
Channel 4	3	2	6	2	5	1
Zapping	3	10	2	4	7	2
<b>Children</b>						
BBC1	38	42	29	28	35	30
BBC2	2	5	6	1	2	4
ITV	54	48	54	67	48	59
Channel 4	1	1	6	0	2	3
Zapping	4	5	4	3	12	3

\* = Less than 0.5%

TABLE 6 PROGRAMME TYPE DISTRIBUTION AS PERCENTAGE OF TOTAL OBSERVED TIME

	Families						Mean
	1 %	2 %	3 %	4 %	5 %	6 %	
Soap operas	2	*	8	-	*	1	2
Nature/ Wildlife	-	-	-	-	-	-	-
News	7	12	12	2	2	17	9
Sport	22	-	*	-	3	-	4
Religion	-	-	-	-	*	-	*
Royalty	-	-	-	-	-	-	-
Crime-drama		-	14	-	-	5	3
Thriller drama	12	17	12	37	-	22	17
Serious music	-	2	-	*	-	-	*
Popular music	-	-	-	-	-	-	-
Chat shows	*	13	1	28	-	-	7
Quiz shows	8	1	27	12	16	10	12
Documentaries	5	26	2	1	1	7	7
Children's Programmes	28	19	8	2	31	22	18
Miscellaneous	4	4	2	7	42	5	11
Trailers	1	2	3	1	1	2	2
Advertisements	10	4	9	8	3	8	7

Note: \* Less than 0.5 per cent

TABLE 7 PROGRAMME TYPE DISTRIBUTION AS A PERCENTAGE OF TIME PRESENT WITH TV SWITCHED ON

	Mothers		Fathers		Children		All	
	Full	Partial	Full	Partial	Full	Partial	Full	Partial
	%	%	%	%	%	%	%	%
Soap operas	3	5	4	6	5	6	4	6
Nature/Wildlife	-	-	-	-	-	-	-	-
News	9	9	13	9	5	8	9	9
Sport	1	1	1	3	2	5	3	4
Religion	*	-	*	-	*	-	*	-
Royalty	-	-	-	-	-	-	-	-
Crim-drama	3	3	3	5	7	-	5	4
Thriller/drama	19	15	22	15	8	11	17	14
Serious music	*	2	-	-	*	*	*	-
Popular music	-	-	-	-	-	-	-	-
Chat shows	*	-	*	6	1	4	*	4
Quiz shows	17	23	15	20	16	18	16	21
Documentaries	9	2	4	*	2	3	5	3
Children's Programmes	15	19	10	17	30	30	18	18
Miscellaneous	14	11	18	7	11	5	12	7
Trailers	3	3	2	4	2	3	2	3
Advertisements	6	6	7	7	11	8	8	6

Note: \* Less than 0.5 per cent

TABLE 8 PROGRAMME TYPE DISTRIBUTION AS A PERCENTAGE OF TIME SPENT LOOKING AT THE TV SCREEN

	Mothers		Fathers		Children		All	
	Full	Partial	Full	Partial	Full	Partial	Full	Partial
	%	%	%	%	%	%	%	%
Soap operas	% 2	2	3	5	3	4	2	4
Nature/Wildlife	% -	-	-	-	-	-	-	-
News	% 3	10	21	12	4	7	10	9
Sport	% *	1	1	*	4	3	2	2
Religion	% *	2	*	2	-	-	*	*
Royalty	% -	-	-	-	-	-	-	-
Crime-drama	% 4	4	-	1	12	3	6	3
Thriller/drama	% 21	25	31	16	10	6	21	16
Serious Music	% -	1	-	-	1	1	-	*
Popular music	% -	-	-	-	-	-	-	-
Chat shows	% *	1	*	2	1	3	*	3
Quiz shows	% 11	24	12	20	18	22	14	23
Documentaries	% 14	7	7	4	1	2	8	4
Children's Programmes	% 17	12	6	11	27	30	13	17
Miscellaneous	% 25	2	14	16	8	10	16	9
Trailers	% *	2	*	3	12	3	*	2
Advertisements	% 4	8	4	7	9	5	7	7

Note: \* Less than 0.5 per cent

TABLE 9 LEVEL OF VISUAL ATTENTION TO EACH PROGRAMME TYPE

	Mothers			Full	Fathers			Children			All		
	Full	Partial	Not at all		Full	Partial	Not at all	Full	Partial	Not at all	Full	Partial	Not at all
Soap operas	% 11	12	76	18	34	49	21	38	41	17	28	54	
Nature/wildlife	% -	-	-	-	-	-	-	-	-	-	-	-	
News	% 6	27	67	41	23	35	18	20	63	27	17	55	
Sport	% 9	16	76	19	14	67	31	14	55	26	15	60	
Religion	% 100	-	-	100	-	-	-	100	-	67	33	-	
Royalty	% -	-	-	-	-	-	-	-	-	-	-	-----	
Crime-drama	% 15	17	68	-	8	91	59	16	25	25	14	61	
Thriller/drama	% 19	29	52	29	16	54	8	6	87	19	17	64	
Serious music	% -	57	43	-	-	100	50	40	10	17	32	51	
Popular music	% -	-	-	-	-	-	-	-	-	-	-	-	
Chat shows	% 3	5	92	5	30	65	3	19	78	4	18	77	
Quiz shows	% 14	36	51	13	22	65	18	22	60	15	27	59	
Documentaries	% 57	24	18	41	20	40	10	21	70	36	22	41	
Children's Programmes	% 9	17	74	7	13	79	30	31	39	15	20	64	
Miscellaneous	% 49	19	31	32	36	31	21	22	57	34	26	39	
Trailers	% 6	26	68	4	22	73	12	31	57	7	26	67	
Advertisements	% 12	27	61	13	21	65	25	17	58	17	22	61	

**TABLE 10 ACTIVITIES OTHER THAN VIEWING PERFORMED IN VIEWING ROOM BY MOTHER AND FATHER WHILE TELEVISION SET IT SWITCHED ON**

Family:	Mother							Father						
	1 %	2 %	3 %	4 %	5 %	6 %	Ave %	1 %	2 %	3 %	4 %	5 %	6 %	Ave %
No activity	40	49	15	34	25	59	37	67	37	40	38	56	50	48
Reading	-	-	5	24	8	10	8	8	-	2	-	-	6	3
Writing	-	-	11	1	-	-	2	-	-	5	-	-	-	1
Eating	19	2	2	3	12	11	8	13	-	9	1	15	7	8
Cleaning	2	*	*	1	1	-	1	-	-	*	2	-	*	*
Ironing	-	12	-	-	-	-	2	-	-	-	-	-	-	-
Sewing	-	-	12	11	-	4	-	-	-	-	-	-	-	-
Sleeping	-	-	-	-	-	-	-	-	1	-	-	-	-	*
Playing	-	-	4	2	-	*	1	-	4	1	-	-	6	2
Dressing	-	1	-	-	*	-	*	-	-	-	-	-	-	-
Walking About	-	-	1	1	11	2	3	3	3	2	9	2	1	3
Breast Feeding	-	-	26	1	7	-	6	-	-	-	-	-	-	-
Changing Nappy	-	-	2	-	-	-	*	-	-	1	-	*	-	*
Smoking	-	-	5	-	-	4	2	-	-	-	-	-	5	1
Other	28	35	30	21	5	14	22	9	53	31	21	28	24	27

Note: \* Less than 0.5 per cent

Figures may add to more than 100% because activities may occur in parallel.

**TABLE 11 ACTIVITIES OTHER THAN VIEWING PERFORMED IN VIEWING ROOM BY CHILDREN WHILE TELEVISION SETS SWITCHED ON**

	Families						Ave %
	1 %	2 %	3 %	4 %	5 %	6 %	
No activity	46	35	31	44	53	53	44
Reading	2	-	*	-	-	2	1
Writing	*	4	-	-	-	-	1
Eating	*	-	10	5	5	12	7
Cleaning	2	-	-	-	-	-	*
Ironing	-	-	-	-	-	-	-
Sewing	-	-	-	-	-	-	-
Sleeping	-	-	6	*	-	*	1
Playing	1	3	5	32	8	5	9
Dressing	-	-	-	-	-	-	-
Walking about	*	27	9	10	5	8	10
Breast Feeding	-	-	-	-	-	-	-
Changing Nappy	-	-	-	-	-	-	-
Smoking	-	-	-	-	-	-	-
Other	31	31	21	11	12	19	21

Note: \* Less than 0.5 per cent

TABLE 12 CONVERSATION IN FRONT OF THE TV SET

	Families						Average %
	1 %	2 %	3 %	4 %	5 %	6 %	
<u>Mother</u>							
TV-related	-	-	*	-	*	-	*
TV-unrelated	5	*	1	1	-	1	1
Unclear	6	8	22	4	17	5	10
None	90	92	77	95	83	95	88
<u>Father</u>							
TV-related	2	1	*	*	2	-	1
TV-unrelated	16	-	-	-	-	1	3
Unclear	2	17	13	15	19	9	13
None	81	82	88	84	79	90	84
<u>Children</u>							
TV-related	1	*	*	*	*	*	*
TV-unrelated	7	-	1	-	11	*	3
Unclear	11	4	9	5	15	8	9
None	82	95	60	95	74	91	83
<u>All</u>							
TV-related	1	1	*	*	1	*	1
TV-unrelated	9	*	1	*	4	1	2
Unclear	6	10	15	8	17	8	11
None	84	90	75	91	79	92	85

Note: \* Less than 0.5 per cent

TABLE 13 POSITION IN FRONT OF THE TV SET

	Mothers %	Fathers %	Children %	All %
Standing	13	14	28	18
Sitting	79	81	59	73
Lyingdown	7	3	13	8