A Dog That Seems To Know When His Owner is Returning: Preliminary Investigations

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INTRODUCTION

Many dog owners claim that their animal anticipates the return of a member of the household, typically by going to wait for him or her at a door, window, driveway, or even at a bus stop (Sheldrake, 1994). Random household surveys have shown that 46% of dog owners have noticed this behaviour in England (Sheldrake and Smart, 1997) and 45% in California (Brown and Sheldrake, 1997). In both these surveys, most of the dogs showing this anticipatory behaviour were said to do so less than 5 minutes before the person arrived home. However, some of these dogs were said to react more than 10 minutes before the person's arrival: in England 16% and in California 19%.

When the dogs react only a few minutes before the person returns, their response may well depend on hearing or smelling them, or on hearing a familiar vehicle in which they are travelling. But for dogs that respond more than 10 minutes in advance, these explanations are less plausible. A motorist could be more than 10 km away, and sometimes more than 50 km away, when the dog reacts. If such anticipatory behaviour does not depend on hearing or smelling the person many kilometres away, then how can it be explained?

One possibility is that it depends on routine times of arrival. Another is that the dog picks up subtle cues from people at home who know when to expect the return of the absent member of the household. Finally, there is the possibility that this behaviour depends on a sixth sense, psychic bond or telepathic influence from the owner even when he or she is far away. A majority of dog owners believe that their animals sometimes exhibit psychic or telepathic powers (Sheldrake and Smart, 1997).

There seem to have been no scientific investigations of this kind of anticipatory behaviour by animals, which is of potential interest both from the point of view of animal behaviour and psychicial research.

In this paper we describe our preliminary investigations into the anticipatory behaviour of Jaytee, a male mongrel terrier owned by Pamela Smart (PS). Over several years, Jaytee has been observed by members of PS's family to anticipate her arrival by up to half an hour, or even more. Jaytee seems to know when PS is one her way, even when no one else does, and even when she returns at non-routine times. In April 1994, PS read an article in the *Sunday Telegraph*, a British newspaper, about the research that Rupert Sheldrake (RS) was doing on this phenomenon, and volunteered to take part.

PS adopted Jaytee from Manchester Dogs' Home in 1989 when he was still a puppy, and soon formed a close bond with him. She lives in Ramsbottom, Greater Manchester, in a ground-floor

flat, next door to her parents, William and Muriel Smart, who are retired. When she goes out, she usually leaves Jaytee with her parents.

In 1991, when PS was working as a secretary in Manchester, her parents noticed that Jaytee used to go to the window almost every weekday at about 4.30 pm, around the time she set off to come home. Her journey usually took 45-60 minutes, and Jaytee would wait at the window most of the time she was her way. Since she worked routine office hours, the family assumed that Jaytee's behaviour depended on some kind of time sense.

PS was made redundant in 1993, and was subsequently unemployed. She was often away from home for hours at a time, and was no longer tied to any regular pattern of activity. Her parents did not usually know when she would be returning, but Jaytee still continued to anticipate her return. His reactions seemed to occur around the time she set off on her homeward journey. She usually travelled in her own car.

The first stage in this investigation was the keeping of written records of by PS and her parents. In this paper we summarize these records, maintained over a period of 9 months. We also describe some simple experiments designed to test the possibility that Jaytee's reactions depended on routine, or subtle cues from her parents, or sounds from her car.

Further investigations have involved the videotaping of Jaytee's behaviour during PS's absences, and the results are described in a subsequent paper (Sheldrake and Smart, in preparation).

Our findings indicate that Jaytee's reactions cannot be explained in terms of routine, sounds of familiar vehicles or knowledge by PS's parents of her time of return. They suggest that Jaytee's reactions may well depend on an influence from PS herself that the dog detects in a manner currently unknown to science.

METHODS

From May 1994 to February 1995, William and Muriel Smart, PS's parents, kept notes on the time at which Jaytee went to the window apparently to wait for PS. They were familiar with his characteristic waiting behaviour and were used to noticing when he went to wait for PS. As usual, they disregarded times he went to the window to bark at passing cats, or for other obvious reasons, and noted down the time at which he seemed to them to be showing his characteristic anticipatory behaviour. The time at which Jaytee seemed to begin to wait for PS was written down at once, before PS returned, and hence before Mr and Mrs Smart knew when she had in fact set off to come home.

From May 1 to July 6 1994, PS kept a record of where she was coming from, her means of transport and her time of arrival at home. From July 7 onwards she also recorded the time at which she set off to come home.

PS travelled by car to a variety of destinations between 0.5 and 51 kms away as the crow flies, and also returned on foot or by bicycle. Since PS was in her 30s and had led an independent life for many years, her parents did not feel the need to know when she would be coming, nor worry about her when she was out. They did not usually know when she would come home, nor did she telephone to tell them. If she was still out when they went to bed, usually from 2300-2330 hrs, they put Jaytee back into PS's flat. There was no one to observe him there, and hence all the recorded observations concern returns before 2330 hrs.

PS's returns took place at a variety of times in the morning, afternoon and evening, ranging from 1015 until after 2330 hrs. Although she usually travelled in her own car, on some occasions she came home in friends' cars, her sister's car and also by taxi.

In some of the experiments decribed in this paper, PS came home at randomly-determined times, which were of course unknown to her parents. In some she returned in taxis. She took care to select different taxis on each occasion.

RESULTS

First series of observations: May-July 1994

In the period May 1 to July 6 1994, on 33 occasions PS went out and left Jaytee with her parents, when who noted down the time at Jaytee reacted, if he did. PS's times of return were as follows:

Morning		1 return
Afternoon		7 returns
Evening	18.00-21.59 hrs	7 returns
	22.00-22.59 hrs	12 returns
	23.00-23.30 hrs	7 returns

On all but one of these occasions, PS went between 6 and 51 kms away and returned by car. On the remaining occasion she went 0.8 km away, and walked.

Jaytee reacted 10 minutes or more in advance of PS's return on 27 occasions, and showed no noticeable anticipatory reactions on 6 occasions, 3 of which were in the afternoon and 3 in the evening. In other words, Jaytee seemed to anticipate 82% of PS's returns, and did not seem to anticipate 18%.

When Jaytee did seem to anticipate PS's return, he usually reacted 10 to 45 minutes in advance.

However, on 3 occasions his reactions began much longer before she returned. On one of these occasions, he reacted 90 minutes in advance, but she was on an unusually long journeuy, taking about 120 minutes, so she was in fact on her way home at the time. But on 2 occasions, his reactions were 75 and 120 mins in advance, and her journey time was around 20 mins. So these reactions seem more in the nature of false alarms than reactions to her setting off.

There was a statistically significant tendency for his reaction times to be shorter with shorter-distance journeys, and longer with longer-distance ones, even when the "false alarms" were included in the analysis ($p=0.01$ for the linear regression between reaction time and distance). However, for this series of observations, there was no precise record of when PS set off home, and the *distance* she was travelling was not an accurate measure of her journey *time* because some journeys were on busy minor roads, others were on motorways, and some were protracted by traffic jams. This made it hard to estimate how closely Jaytee's reactions corresponded to the time she set off. In the following series of observations, this difficulty was overcome by PS noting down the time at which she set out.

Second series of observations: July 1994 - February 1995

In the second series, as before, PS's parents wrote down the time at which they thought Jaytee began to show his anticipatory behaviour. PS kept more detailed notes of her journeys, including a record of the times she set off to come home, and any comments her parents made about Jaytee's behaviour.

The journeys in this series were to destinations between 0.5 and 51 km away, and were made by car. Most (51 out of 63) were in PS' own car (a Rover 213 Saloon) and12 journeys were in her sister's car (a BMW 316). Some of her returns were in the morning and afternoon, but most were in the evening, between 2100 and 2300 hrs (Fig. 1). As before, she did not inform her parents at what time she would return.

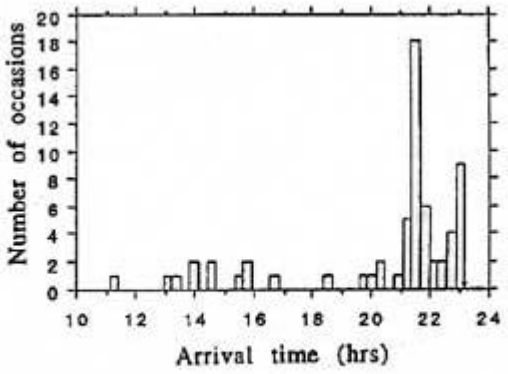

Figure 1. Distribution of the times of day at which PS returned home during the period July 1994 to February 1995.

On 55 (87%) occasions Jaytee showed an anticipatory response at least 6 mins before PS arrived home, and on 8 (13%) occasions he did not (Table 1).

Table 1

Responses of Jaytee when PS was returning from places 0.5 to 51 km away from home. 'Journey time' refers to the time in minutes that she took to drive home; 'reaction time' refers to the time in minutes before PS's return that Jaytee began to anticipate her return. All journeys were in PS's own car except for those marked with an asterisk, which were in her sister's car.

Date	Distance (km)	Journey time (min)	Reaction time (min)
1994			
8/7	23.0	55	5
10/7	9.0	15	10
11/7	20.0	28	28
20/7	11.0	42	40
21/7	7.0	20	25
23/7	10.5	20	0
30/7	6.0	9	0
31/7	51.0	55	70
2/8	8.0	22	0
4/8	9.0	12	30
18/8	1.0	20	15
18/8	9.0	17	12
20/8	6.0	10	5
24/8	6.0	13	4
25/8	7.0	15	10
26/8	9.0	20	15
30/8	6.0	12	13
4/9*	0.5	12	12
18/9	9.0	18	18
19/9*	11.0	22	22
22/9	6.0	10	27
25/9	9.0	13	30
26/9*	11.0	26	23
28/9	6.0	10	7
3/10*	11.0	26	34
5/10	9.0	24	24
6/10	15.0	23	23
10/10*	11.0	23	23
12/10	9.0	21	69
13/10	15.0	18	14
30/10	9.0	15	0
31/10	1.0	12	13
1/11	3.0	9	9
2/11	6.0	10	6
3/11	15.0	17	7
8/11	9.0	17	12
9/11	6.0	7	6
14/11*	11.0	35	50
19/11	7.0	11	10
21/11*	11.0	21	31
22/11	9.0	18	12
26/11	51.0	55	50
27/11	9.0	12	8

28/11	11.0	17	6
29/11	6.0	11	11
3/12	9.0	17	12
5/12*	11.0	20	16
9/12	9.0	16	15
11/12	51.0	61	61
19/12	9.0	15	6
27/12	6.0	7	14
1995			
9/1*	11.0	22	23
11/1	6.0	9	5
16/1*	11.0	23	21
23/1*	11.0	28	10
25/1	16.0	40	37
26/1	9.0	13	3
30/1	11.0	29	0
2/2	6.5	21	22
6/2*	11.0	22	10
8/2	4.0	10	0
13/2	11.0	25	0
16/2	9.0	16	14

In 20 cases Jaytee reacted at the time PS set off, or within 2 minutes of this time (Table 1). In 9 cases Jaytee reacted more than 3 minutes early. On one of these occasions, on 4/8/94, he was very unsettled owing to a thunder storm; on the other 8 , no special circumstances were noted. In 26 cases he reacted more than 3 minutes late. On at least two occasions, on 4/9/94 and 31/10/94, PS stopped to chat on the way home, so her journey took longer than it would have done otherwise.

Figure 2 shows a plot of the dog's reaction time against PS's journey time. There is a clear tendency for Jaytee to react sooner when the journey is longer. In other words Jaytee's reaction were related to the time that PS set off, as if he knew when she was she was on her way home.

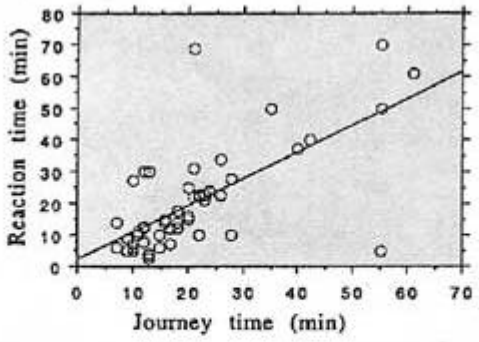

Figure 2. Relationship between the duration of PS's homeward journeys and the number of minutes before her return that Jaytee's anticipatory reactions began ('reaction time'). The data shown are for 55 journeys during the period July 1994 to February 1995, and exclude the 8 occasions on which Jaytee showed no anticipatory reaction.

As a linear regression, this relationship is highly significant ($F= 43.3$; $p<0.0001$). This analysis excludes the 8 occasions on which Jaytee did not react. When they are included, the relationship is still highly significant ($F=39.1$, $p<0.0001$).

The residuals from the regression shown in Fig. 2 were plotted in a further linear regression against the PS's distance from home (as the crow flies) when she set off on her homeward journey. There was no significant relationship ($F=0.827$, $p=0.4$) between the residuals and distance, indicating that Jaytee's reactions to PS setting off did not depend on distance, at least in the range 0.5-51 km.

Jaytee's failures to react

During the period July 1994 to February 1995, there were 8 recorded occasions on which Jaytee did not react. The notes kept by the Smart family show that on some of these occasions his behaviour was unusual.

On one occasion when Jaytee failed to react, Mrs Smart was out. On two occasions, she was present but asleep. Jaytee was closely bonded with Mrs Smart, but rather afraid of Mr Smart. When alone with Mr Smart, Jaytee hid under the bed and was not observable. Hence his failures to react on these three occasions may simply have reflected his fear of Mr Smart and his hiding out of sight.

On all the 55 occasions on which Jaytee *did* react, Mrs Smart was present and awake. However, when Mrs Smart *was* present and awake, Jaytee still failed to respond on five occasions. On one of these five occasions, there were many external distractions, including a neighbour's bitch on heat, and an assembly of dogs outside, attracted by the bitch.

On one occasion, Jaytee was asleep throughout.

On one occasion he had a sore paw he kept licking.

On two occasions there was no apparent distractions or reasons for his lack of response.

The effects of returning by unusual means

Jaytee's anticipatory reactions usually began when PS was over 6 km away, and in some cases over 50 km away. The possibility that Jaytee was responding to the sound of PS's car or other familiar vehicles in which she was travelling does not seem plausible. It is scarcely conceivable that he could hear her car at such distances, especially when the car was downwind and against the background of the heavy traffic in the Greater Manchester area and on the M66 motorway, which runs close to Ramsbottom.

Nevertheless, to test the possibility that Jaytee was reacting to the sound of PS's car or other

familiar vehicles, we investigated whether he still responded when she travelled by unusual means. Over a period of several years, PS's parents had already noticed that Jaytee anticipated her return even when she arrived in unfamiliar vehicles. In addition, we carried out some simple tests in which PS travelled by unusual means.

In one such test, carried out on 13/7/94, she travelled by bicycle to a place 2.5 km away as the crow flies. Her journey home took 15 minutes, but she started getting ready to go some 10 minutes earlier, i.e. about 25 minutes before arriving home. Jaytee reacted earlier still, 35 minutes before she arrived.

TABLE 2

PS's Journey Home by Taxi

Date	Place	Distance (km)	Arrival time (hrs)	Journey time (min)	Reaction time (min)
7/7/94	Bury	6	2325	14	14
8/7/94	Radcliffe	9	2215	15	15
13/7/94	Bury	6	2255	10	0

In three other tests, she travelled by taxi, which she had very rarely done before. On each occasion she made sure that she was in a different car. The results of these tests are shown in Table 2. On two out of three occasions, Jaytee reacted at or before the time she set off; on one he did not react.

The effects of returning at randomly selected times

Although PS did not usually tell her parents when she would be coming home, nor telephone to inform them, it is possible that they might in some cases have guessed when she would be coming and consciously or unconsciously communicated their expectation to Jaytee. Some of his reactions might therefore be due to her parents' anticipation, rather than depending on some mysterious influence from PS herself. To test this possibility, we carried out experiments in which PS set off at times selected at random after she had left home and which were unknown to her parents.

1. On the evening of 8/7/94, PS went to Radcliffe, 9 km from her home. The time at which she set off to come home was determined when she arrived at her destination by tossing a coin twice, following these prearranged instructions: heads-tails, leave at 22.00 hrs; tails-tails, 22.20; tails-heads, 22.40; heads-heads, 23.00. In fact, she got heads-tails and left by taxi at 22.00 hrs. The journey home took 15 minutes. Jaytee reacted at 22.00 hrs (Table 1), the time at which she set off.

2. On 15/7/94, RS met PS in Bury, 6 km from her home, before going on by taxi to meet Jaytee and Mr and Mrs Smart in their flat. RS observed Jaytee while PS remained in Bury and came home at a randomly determined time.

The random time of her return was decided as follows. RS brought with him 4 sealed envelopes, each of which contained a number from1 to 4 written on a piece of paper and wrapped in aluminium foil. These envelopes had been prepared by a third party in RS's absence. When they met in Bury, PS chose 1 of these envelopes, and RS discarded the other 3. PS went to a friend's house nearby, and waited until RS had time to arrive at her parents' flat, which he did at 15.35. At 15.45 she telephoned a colleague of RS in London, who tossed a coin and told her whether it was heads of tails. She then opened the sealed envelope. The time at which she was to set off was specified according to the following schedule:

Number in envelope Heads Tails

Number in envelope	Heads	Tails
1	1614	1618
2	1620	1624
3	1626	1630
4	1632	1636

In fact, it was tails and she got number 2, so her departure time was 16.24.

While RS was in Mr and Mrs Smart's flat there were no telephone calls.

Jaytee spent most of the time, as usual, by the feet of Mrs Smart. At 16.14 he went to the window, but after a few seconds went away again; he did not wait there.

At 16.22 he went to the window again. This time he showed his usual waiting behaviour; he was looking out alertly and had his ears pricked. At 16.25, Mr Smart commented "He seems interested now". Jaytee left the window at 16.26 for 6 seconds, and then returned and remained at the window without a break. At 16.29. Mr Smart said, "I can guarantee she'll be here soon". At 16.34, PS arrived in her car, and Jaytee greeted her eagerly, with his tail wagging.

In this experiment, Jaytee reacted 2 minutes *before* PS actually switched on her car engine and started to drive homewards. But in fact she left her friend's house and got into her car a minute or two before 16.24. Unfortunately, we do not have a record of the moment she started leaving the house, but it must have been very close to the time at which Jaytee reacted.

3. On 24/11/94 an experiment was carried out in conjunction with a team from the Science Unit of Austrian Television (ORF), headed by Dr Heinz Leger. The experimental procedure involved

a randomly chosen time of return and the return of PS in a taxi. The movements of PS and the behaviour of Jaytee were monitored by two cameramen, the time codes of whose cameras were synchronized at the beginning of the experiment. One cameraman remained in the flat of Mr and Mrs Smart and filmed Jaytee continuously. Neither he nor Mr and Mrs Smart knew at what time PS would return, and nor did PS herself.

PS set off in her own car with the Austrian team at 11.00 hrs and spent the next few hours round and about the town of Ramsbottom, looking at shops, having lunch at a cafe, and walking. She was filmed during this period. At 14.45, PS was sitting on a bench in a churchyard, 0.9 km from her home, talking to a member of the Austrian team, and at 14.50 she was informed that this was the time randomly selected by the Austrians for her return. Until this moment, she did not know when she would be returning. She then walked to a taxi rank, arriving there at 14.55. The taxi set off at 14.59 and she arrived outside her home at 15.05, and entered her parents' flat at 15.06, when Jaytee greeted her enthusiastically.

From the videotapes, Jaytee's behaviour can be observed in a detail not previously possible. During the period that PS was out he spent practically all the time lying quite calmly by the feet of Mrs Smart. In the edited version produced by ORF for transmission on television, over the period that PS was told to return, both videotapes can be seen together on a split screen in exact synchrony, so that PS can be observed on one side of the screen, and Jaytee on the other. To start with, Jaytee is, as usual, lying by Mrs Smart's feet. PS is then told that it is time to return, and almost immediately Jaytee shows signs of alertness, with his ears pricked. Then, 11 seconds after PS has been told to go home, while she is walking across the grass of the churchyard on her way to the taxi rank, Jaytee gets up, walks to the window and sits there expectantly. He remains at the window for the entire period of PS's return journey. (A videotape showing sequences from this experiment is commercially available: Sheldrake, 1997)

Thus in this experiment, Jaytee reacted within 11 seconds of PS starting to go home at a randomly selected time. Although the distance as the crow flies was only 0.9 km, there seems to be no way in which Jaytee could have known by normal sensory means that PS was setting off to come home.

DISCUSSION

The dog's anticipatory behaviour

The observations described in this paper indicate that on most occasions when PS returned home, her dog Jaytee seemed to know when she was coming. His characteristic anticipatory behaviour, sitting by the window as if waiting for her, was related to the time she set off to come home (Fig. 2). The statistical significance of this effect was very high ($p<0.0001$).

From July 1994 to February 1995, on 20 occasions Jaytee's reactions began within 2 minutes of the time PS set off. On 26 occasions his reactions were more than 3 minutes late, and on 9

occasions more the 3 minutes early. Is this variation merely a result of chance factors? Or is some of this variation due to biases in the way the data was recorded? Perhaps it is. At least two kinds of bias are likely to have influenced the data.

First, some of the data on Jaytee's behaviour be biased towards lateness. If Mr and Mrs Smart were not in their sitting room, or if they were distracted, for example by visitors, by telephone calls or television programmes, they would not have noticed Jaytee's reactions immediately. Thus on some of the occasions when Jaytee's reported reactions began after PS set off to come home, he may in fact have reacted earlier, closer to the time she set off.

Second, on some of the occasions on which Jaytee reacted early, this earliness could be an artefact arising from the way in which PS's time of setting off was defined. The setting-off times recorded by PS were those at which she actually began her journey. But sometimes she started getting ready to go10 minutes or more beforehand, or took time to say goodbye to the people she was with, or chatted as she was leaving. And sometimes she was thinking about leaving before she made a move to do so. For example, this was the case when she was travelling by bicycle on 13/7/94, as described above, when the heat of the day and the long ride ahead made her unusually conscious of her impending departure.

The way in which the data could be biased in such a way that Jaytee appears to react early is illustrated precisely by Experiment 3. Jaytee's reaction clearly coincided with PS first making a move to go home, as recorded on the video. But this first move and Jaytee's reaction occurred five minutes before she reached the taxi, and nine minutes before the taxi actually set off. Thus, if leaving in the vehicle had been taken as her setting-off time, then Jaytee's reaction would seem to have happened nine minutes early.

However the details of the data are interpreted, it is clear that Jaytee does indeed usually show anticipatory behaviour before PS comes home around the time she sets off.

How does the dog know when his owner is coming home?

How can Jaytee's anticipation of PS's return be explained? Several possible explanations need to be considered:

1. Routine expectation. If PS came home only at routine times, as she did when she worked in Manchester as a secretary, Jaytee's behaviour might indeed be a matter of routine expectation. But in fact PS did not come home at routine times, and her arrivals were not predictable within a matter of minutes (Fig.1). In some cases PS came home at times selected randomly, unknown to her parents, and Jayteee still seemed to know she was coming. So the routine theory is not plausible.

2. Hearing the sounds of familiar cars. Jaytee's reactions cannot be explained in terms of hearing PS's or other familiar cars starting up many kilometres away, because he still seemed to know

when she was coming when she was travelling in unfamiliar vehicles. Also, on some occasions he seemed to react *before* she got into the vehicle to come home. He seemed to be responding to her *intention* to come home, rather than to her actually sitting in a homeward-bound vehicle. This was illustrated very clearly by the videotapes of Experiment 3.

3. Reaction to the expectations of PS's parents. If PS's parents knew when to expect their daughter, Jaytee could pick up their expectation and accordingly exhibit his anticipatory behaviour. exhibit . But on most occasions they did not know when she would be coming, and in some cases her return time was selected at random could not have been anticipated by them. Yet Jaytee still anticipated PS's return.

4. Telepathy between PS and her mother. Three of the occasions when Jaytee did not react occurred when Mrs Smart was absent or asleep. In all cases where Jaytee did react, Mrs Smart was present and awake. This could suggest that his anticipatory reactions are somehow mediated by subtle cues from Mrs Smart. But on most occasions Mrs Smart did not know when PS would be coming home. And Jaytee still reacted when PS came home at unusual times, unexpected by her mother. In all three experiments in which PS set off at randomly determined times, Jaytee's reactions still occurred around the time she set off.

Perhaps Mrs Smart was telepathically linked to her daughter in such a way that she unconsciously picked up her intention to come home, and then unconsciously showed anticipatory reactions that Jaytee picked up.

This potential explanation presupposes the possibility of telepathy between daughter and mother. But if the possibility of telepathy is admitted, it would be simpler to suppose that there was a direct influence of PS's intentions on Jaytee himself. Moreover, in other experiments to be dscribed in a subsequent paper, Jaytee seemed to anticipate PS's return when Mrs Smart was not present but one of her sisters was present instead. And in some cases, when Jaytee was on his own in PS's flat and his behaviour was recorded on videotape, he still reacted around the time she set off to come home (Sheldrake and Smart, in preparation).

5. Reacting to his owners intentions at a distance. Jaytee could have been responding to PS's intentions in a manner currently unknown to science. This is the explanation we think most probable. Jaytee's reactions could be described as telepathic, psychic or as dependent on a "sixth sense". We favour an interpretation in terms of morphic fields (Sheldrake, 1994).

Since the period covered by this report, we have continued to investigate Jaytee's behaviour. In order to obtain an objective record of his activity, we have used a video camera to record his reactions during the entire period of PS's absences. The results of this research are described in a subsequent paper, and favour the idea that Jaytee reacts to his owner's intentions (Sheldrake and Smart, in preparation).

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