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Article title

Towards diagnostic conversational profiles of patients presenting with dementia or functional memory disorders to memory clinics

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Keywords

Dementia; differential diagnosis; communication; functional memory disorders; Conversation Analysis

Structured Abstract

Objective

This study explores whether the profile of patients' interactional behaviour in memory clinic conversations with a doctor can contribute to the clinical differentiation between functional memory disorders (FMD) and memory problems related to neurodegenerative diseases.

Methods

Conversation Analysis of video recordings of neurologists' interactions with patients attending a specialist memory clinic. "Gold standard" diagnoses were made independently of CA findings by a multi-disciplinary team based on clinical assessment, neuropsychological testing and brain imaging.

Results

Two discrete conversational profiles for patients with memory complaints emerged, including i) who attends the clinic (i.e. whether or not patients are accompanied), and ii) patients' responses to neurologists' questions about memory problems, such as

difficulties with compound questions and providing specific and elaborated examples and frequent "I don't know" responses.

Conclusion

Specific communicative difficulties are characteristic of the interaction patterns of patients with a neurodegenerative pathology. Those difficulties are manifest in memory clinic interactions with neurologists, thereby helping to differentiate patients with dementia from those with FMD.

Practical implications

Our findings demonstrate that conversation profiles based on patients' contributions to memory clinic encounters have diagnostic potential to assist the screening and referral process from primary care, and the diagnostic service in secondary care.

1. Introduction/Background

The clinical differentiation of memory complaints attributable to progressive neurodegenerative disorders leading to dementia (ND) and that of similar complaints due to functional memory disorders (FMD, i.e. non-progressive memory deficits) [1] is a frequent challenge in specialist memory clinics. Recent observations in the United Kingdom (UK) suggest that up to 50% of patients referred to memory clinics are diagnosed with FMD rather than memory complaints secondary to ND [2].

Previous research shows that distinguishing ND from FMD is associated with high rates of diagnostic errors [1]. This is particularly true when diagnosis is attempted at the earliest stages of possibly progressive memory disorders. However, an early differentiation of ND from FMD is highly desirable from a therapeutic point of view and has been declared a particular health service priority by the UK government [3, 4].

Clinical differentiation of cognitive symptoms due to neurodegenerative dementia, especially early stage Alzheimer's Disease (AD), is still difficult due to a lack of reliable biomarkers. There is some evidence, however, that analysis of patients' language may contribute to detecting dementia risk in patients with mild cognitive impairment [5-7], in spontaneous writing [8-10], and spontaneous speech [11, 12]. Language impoverishment through grammatical simplification, loss of vocabulary, semantic paraphasias, and overuse of semantically empty words is progressively evident in dementia [13, 14]. However, detection of such linguistic impoverishment i) requires complex linguistic analysis, ii) may be diagnostically ambiguous, and iii) does not yet take account of more directly observable conversational/communicative features of patients' interactions.

The assessment of a patient's memory concerns typically begins with history-taking, complemented by neuropsychological testing and brain scanning (Magnetic Resonance Imaging (MRI) or Computerised tomography (CT)). It is widely recognised that reliance on tests alone increases the rate of erroneous diagnoses [1]. Although the patient's history is a key to diagnosis and to choosing an appropriate treatment strategy, the interaction between doctor and patient, central to the diagnostic process of memory problems, has received relatively little research attention.

The purpose of this study was to explore patient interaction as a diagnostically relevant resource to differentiate organic (i.e. ND) and non-organic causes of memory complaints [15]. Building on previous work exploring the use of Conversation Analysis (CA) as a diagnostic aid in the seizure clinic [16-18], and an initial analysis of a small subset of our corpus of recordings from the memory clinic [19], the present study focused on patients' participation in initial clinical encounters with neurologists, to investigate the potential of using conversational features to distinguish memory complaints related to functional causes from those caused by ND.

2. Methods

2.1 Study design

The study design parallels prior research that identified, described and tested profiles of interactional, linguistic and topical features as aids in the differential diagnosis of patients with epilepsy or psychogenic non-epileptic seizures [16-18]. Using similar analytic methods, we aimed to distinguish between conversational patterns observable in interactions with patients whose memory complaints are due either to ND (such as Alzheimer's disease) or FMD. FMD diagnostic criteria were suggested by Schmidtke et al. [20]; for a more extensive discussion of the nature of FMD, and the differences between FMD, Mild Cognitive Impairment (MCI) and Subjective Memory Complaints, see [1]. Participating patients were screened for depression using the Patient Health Questionnaire 9 (PHQ9) [21]. However, a past history of depression and current dysthymia were not exclusion criteria. Depression is known to be a contributory cause of cognitive difficulties, and dementia and depression can often be associated; mood screening was, therefore, conducted in order to control this by exclusion.

2.1.1 Patient recruitment

Between October 2012 and October 2014, a total of 99 patients initially presenting to the memory clinic in the Department of Neurology at the Royal Hallamshire Hospital, Sheffield, United Kingdom, were video recorded. Patients had been referred to the neurology-led memory clinic service, from the area covered by the South Yorkshire Health Authority. The majority of referrals were from primary care, but others from non-specialist neurologists and psychiatrists were also accepted. Appointment letters

to patients routinely encouraged them to bring along a family member, friend or carer to the clinic.

2.1.2 Diagnostic process

Patients were provisionally diagnosed following their assessment by a specialist consultant neurologist and completion of the Addenbrooke's Cognitive Examination (ACE-R, a 20 minute screening tool). Final 'gold standard' clinical diagnosis was reached by interdisciplinary consensus based on history, extensive neuropsychological testing and magnetic resonance imaging (MRI) of the brain. Pathological confirmation of clinical diagnoses was not available within the timeframe of this study.

The neuropsychological battery included the Mini Mental State Examination [22], tests of short and long term memory (verbal and non-verbal) [23, 24], tests of abstract reasoning [24, 25] and tests of attention and executive function [26], tests of language comprehension [27], naming by confrontation, and category and letter fluency. Neuropsychological testing [28] is routinely administered to patients attending this clinic, and was especially important for this study which required a 'gold standard' clinical diagnosis for all patients recruited. Patients were screened for anxiety using the Generalised Anxiety Disorder 7 questionnaire [29].

2.1.3 Neurologists' questioning

Analysis focused on the opening history-taking phase of the memory clinic visit, preceding more formal cognitive tests (e.g. ACE-R). There was no intervention in the normal conduct of history-taking, except that to ensure comparability neurologists were reminded to cover fully the conventionally required questions in each interview.

These included asking patients for as full an account as possible of their memory difficulties, including specific examples of when and how their memory had let them down, and questions about who was most concerned about their memory difficulties and their expectations of the visit.

2.1.4 Data corpus - Participant details

A total of 30 cases were included in the analysis; 15 of these patients received an ultimate clinical diagnosis of FMD, 15 were diagnosed with ND (11 with early dementias, 4 with amnesic MCI highly likely to develop into dementia) (see table 1 for more patient details). For present purposes we focused only on patients who satisfied the relevant 'gold standard' diagnostic criteria; other cases were not included because patients did not fulfil published criteria either for FMD [20] nor ND [30, 31]. Excluded cases included instances of depressive pseudo-dementia, cognitive disorders due to other psychiatric conditions, and significant cognitive disorders due to other neurological conditions but not neurodegeneration.

Table 1

Non-parametric statistics were performed on demographic variables (age and education level) and on mood scales (PHQ-9 [21] and GAD-7 (see [29])). There were no significant differences between the two groups on these variables. A chi-square test was carried out to ascertain whether the number of patients who came accompanied in the ND and FMD groups differed; the ND group were significantly more likely to be accompanied than the FMD group ($p < 0.008$). See Table 1 for the details of these results.

2.2 Conversation Analysis

The data were analysed using the perspective and methods of CA, to investigate the temporal and sequential real-time progress of interaction (including verbal and non-verbal conduct), and identify the systematic patterns and practices through which participants understand one another [e.g. 32, 33-35]. CA has been applied successfully to doctor-patient interactions, focusing particularly on their interactional structure, dynamics and organisation, to inform and direct medical practice and diagnosis [17, 36, 37]. Video recordings provide access to non-verbal features of interactions, which can be vital when investigating and understanding embodied features such as the 'head-turning sign' previously linked to Alzheimer's disease [38-40].

The video recordings were transcribed in accordance with the conventions devised by Jefferson [41], capturing real-time features of the talk and widely used in CA research. The qualitative video data management software Transana [42] was utilised to organise, compare and analyse cases across the entire video corpus. This software facilitated populating the analytic categories that were being identified across the corpus and within the different diagnostic classifications, which developed into the collections outlined in this paper.

The differential conversational profiles of the two diagnostic groups were established through the following methodology. The diagnosis for each patient was made by the clinical team by multidisciplinary consensus, using the clinical interview, neuropsychological tests and findings from neuroimaging investigations. The history-taking interactions were then reviewed in order to identify conversational factors or patterns which clustered in one or the other diagnostic group, and which thereby contributed to the conversational profile of each group (this study design and methodology follows that reported in [16-18]). Although the role of companions

(when present) is being investigated and will be reported in future papers, for present purposes we focus only on when and how accompanying persons feature in the patients' talk. For instance, a patient might suggest that their companion is better placed to provide certain information ("I can't really remember half of what's...you're better off asking me husband. He'll probably give yah a lot more information").

2.3 Ethics

The study was approved by the NHS Research Ethics Committee (NRES Committee Yorkshire & The Humber - South Yorkshire). The recruited patients received written information about the study at least 48 hours prior to their appointment and were encouraged to discuss the information provided with anyone they wanted to bring along to the clinic visit. On the day of the visit, they had the opportunity to speak to a member of the research team prior to their appointment. Participants gave written informed consent, having been told that they could withdraw from the study at any time. Patients lacking capacity to consent were excluded from the study. Confidentiality was assured and transcripts were pseudo-anonymised of participants' identifiers in any subsequent outputs.

3.Results

We identified working conversational profiles that distinguished between the two patient groups, i.e. patients with memory complaints due to ND and patients with FMD. Broadly the profile is separated into two areas: who attends the memory clinic, and how patients respond to neurologists' questions during history-taking.

3.1 Accompanying persons

Whilst patients were routinely encouraged to attend the clinic accompanied by a relative or friend, not all patients did so. An early (and therefore provisional) indication of a patient's eventual diagnosis is **whether or not they were accompanied** (typically by at least one family member). In the dementia subset 10 out of 11 (91%) were accompanied, whereas only 6 out of 15 (40%) of patients with FMD were joined in the consultation (see table 1). This differentiating feature is consistent with the findings of previous research [43, 44].

We then considered **how patients involved accompanying persons (APs) in their attempts to answer neurologists' questions**, and generally in giving an account of their memory problems [15, 45]. It is clear that from time to time, most frequently in interviews with ND patients, APs often acted as spokespersons for patients, for instance by providing information about the difficulties the patient had experienced. Figure 1, taken from the opening exchanges of a patient with a ND, is a clear example of an AP's contribution to his spouses' consultation.

Figure 1

Here the neurologist asks two direct questions. It is evident that the AP treats the delay in response (the silence in line 3) as indicating that the patient might have trouble in responding and therefore steps in to answer on the patient's behalf. Such interjections occurred only in the interviews of patient's with ND; there were no comparable instances in the FMD subset.

However, these contributory interventions by APs remain to be analysed further; we focused instead on **how patients involve APs in the interactions**. In the next example, from a consultation with a patient with FMD, AP's contribution follows a rather different pattern. The AP only contributes (non-verbally) when requested to do so by the patient (again tacitly through turning towards her as a confirmation check in line 3).

Figure 2

This example illustrates the different shape that characterised triadic encounters involving patients with FMD; the AP's role was to act as a resource available to the patients when they wanted to check the accuracy of their responses (referred to here as confirmation checks), as well as when seeking a second opinion.

3.2 Responding to neurologists' questions about memory problems

Patients were regularly (n=14, out of 26 consultations) asked "**Who is most concerned about the memory problems?**" (or some variation) [46, 47]. A clear distinction emerged in the responses given by FMD and ND patients. In all 9 of the FMD cases in which the question was asked, the patient stated that they were the one most concerned ("[It's] me"). Note that attending alone might also be related to this. In the most transparent case, an FMD patient expands his utterance, saying "My partner dun't even know I'm `ere. (2.0) I've not even discussed it with him...((continues discussing his anxieties))".

In contrast, the same question yielded a very different response from the patients with dementia; in 4 of the 5 cases the AP said they were both more aware of and concerned about the memory problems (e.g. "I got her to see the GP..." in case 048). Furthermore, there was evidence to suggest that the patients themselves were not aware of any problems or could not answer the question, sometimes failing to reply altogether (e.g., "I don't know" in case 033, which the AP responded to by saying "Well I am certainly worried about it" registering her position).

3.3 Patient recall of recent memory failure

In 17 of the 26 cases analysed the neurologist asked the patient to give an example of the most recent time their memory let them down ("**Can you give me an example of the last time your memory let you down?**", or some variant thereof). In 11 of the 12 occasions from the FMD category when this question was asked, the patient successfully provided a relevant and detailed example of a particular recent event, as illustrated in Figure 3.

Figure 3

In contrast the ND patients had difficulty answering this question and giving such an example (see Small and Perry on the difficulties surrounding episodic memory for Alzheimer's patients [47]). Most either made no response, or only the beginnings of a response (e.g., "um" or "er"), or declared they were unable to remember a specific occasion. In 2 cases the patient sought the assistance of the AP ("can you?"). In the few cases when patients from this group responded, the 'example' offered was a routine or common problem, rather than a specific incident (e.g., "happens all the time" or "it's daily").

3.4 Responding to compound questions

The majority of neurologists' questions were mono-topical (e.g. "can you tell me the last time it happened to you?" in Figure 3 above). However, they sometimes asked compound questions consisting of two or more items/questions (for an account of the conversational affordances associated with compound constructions see [19, 48]).

An example occurs in Figure 1 above, when the neurologist asks "Do you know the reasons why you've been referred to this clinic and, and who's more concerned?".

The two patient groups responded differently to **multi-component, compound questions**.

FMD patients were able to attend to multiple parts of a question (e.g. "can you tell me a little bit about your background, where you're from originally and where did you go to college") in their responses and could return to other elements of the initial

question after providing detailed answers to aspects of it (see also [19]). In contrast, ND patients experienced difficulties, frequently replying to single components of the compound questions, and were unable to recall and respond to other aspects of the original question, so that the neurologist was required to repeat the omitted parts of the question. This is evident in Figure 4.

Figure 4

The patient answers the first part of the question about reading, but after the 27 omitted lines, seems unable to recover the second and third items in the original question - items that the neurologist therefore repeats (line 7). For a more detailed exposition of ND patients' difficulties responding to compound questions see Jones et al. [19].

3.5 Inability to answer

Previous research by Mikesell [49] into patients with frontotemporal dementia highlighted the frequency with which they did 'not know' answers to questions about matters they would be expected to know/remember, such as personal issues [47, 50]. Our study develops these findings by identifying equivalent ways in which patients indicate they are unable to answer such questions, as well as answering that they 'do not know' (i.e. cannot remember).

FMD patients responded verbally with "I don't know" only rarely (four times in 15 cases), each in response to questions about their "expectations" for the visit. On another 4 occasions FMD patients indicated non-verbally that they didn't know, by

turning to their AP for assistance. Whether patients indicated their inability to answer verbally or non-verbally, they conveyed that they were unsure because they had not previously considered the matter, rather than being unable to recall.

However, ND patients displayed a different pattern of response, indicating specifically an inability to remember. In the clinical interviews with 11 ND patients there were 45 responses indicating that they could not recall, whether verbally (29 cases) or embodied in the form of 'head turning' signs (16 cases, illustrated below). The results of non-parametric tests (Fischer's exact) show that there is a significant difference in the number of verbal 'I don't know' responses ($p < 0.004$) but not for head turning or other non-verbal forms ($p = 0.103$).

Such problems recalling information is exemplified by the following sequence (Figure 5).

Figure 5

The patient's difficulty recalling her travels are evident in her responses in line 3, 6 and 10 (and non-response in line 14); however her response "not offhand" (line 23) most clearly indicates difficulties recalling matters that she might be expected to remember.

Previous studies have noted a high incidence of head-turns in patients with dementia [38-40]. The prevalence of head-turning indicates recall difficulties and conversational problems in general. ND patients frequently defer questions to their companions to fill in their memory gaps [46, 51, 52].

A typical example is provided in Figure 6 below.

Figure 6

Notice the lengthy pauses in lines 3 and 5, in conjunction with the patient's turn to AP1 in line 4 display that he "didn't know how to answer".

3.6 Patients' elaborations and length of turns

FMD patients often elaborated their responses by volunteering unsolicited details when responding to relatively closed questions (example given in Figure 7).

Figure 7

The patient's response in Figure 7 goes beyond the original question by explaining where she grew up and studied at university. This additional material is appropriate and relevant to the topic at hand. This kind of expansion or elaboration by the patient is very common in the FMD consultations, but was rarely seen in the ND group [47].

The fundamental difference between the patient groups was that the ND patients were generally unable to go beyond the (literal) parameters of the question as demonstrated in Figure 8.

Figure 8

Briefly, this example displays a number of features outlined above. First, the patient offers a delayed and short reply ("I worked") to the neurologist's question about their post-school activities. This question gives the patient the opportunity to expand on her answer (as seen in Figure 7 with the FMD patient) and the neurologist's follow-up questions indicate a similar orientation. However, the patient struggles to provide any further detail (notice the long gaps) and agrees that they cannot "remember".

4. Discussion/Conclusion

4.1 Discussion - Summary

The principal aim of this research was to develop conversational profiles, which could help distinguish between the interactional behaviour of patients with FMD and that of patients with memory problems due to ND. We have identified and explored a range of conversational indicators that can aid the diagnostic process. Patients with ND were more likely than those independently diagnosed with FMD to be accompanied during their visit to the memory clinic. The companions of patients with ND were more likely to be concerned about the patients' memory difficulties than patients themselves; by contrast FMD patients who were accompanied were, when asked, always more concerned than their companions. Even when accompanied to the clinic, patients with FMD only rarely sought their companions' assistance in answering questions; conversely, patients with dementia relied to a very large extent on their companions' assistance in answering. Patients with ND struggled to answer specific questions in much detail (if at all), had difficulties responding to compound questions, frequently responded "I don't know" when unable to recall information, and generally had difficulties sustaining the interaction - their memory failure impacting significantly on their ability to communicate with the neurologist during the outpatient clinic encounter [51-54]. Patients with FMD on the other hand interacted much more confidently with the neurologists, could provide numerous extended and specific examples of memory difficulties, give detailed answers going beyond the parameters of the question and they could handle and recall all parts of compound questions. Future research will be undertaken to confirm the diagnostic sensitivity and specificity of the different interactional features described here and that of the conversation profiles as a whole. This will be done by blind testing – coding a sample

of history-taking interactions for which the clinical diagnosis is known, but not revealed to the coders, in order to test the effectiveness of the conversational profile emerging in predicting/identifying dementia and FMD.

4.2 Conclusion - Study limitations

The limitations of our study include the following: the conversational profile we report was based upon a relatively small sample size drawn from patients attending a single memory clinic in Sheffield, UK. Small datasets are common for conversation analytic research of this kind based on the detailed and extensive analysis of recorded data and associated transcripts [18]. Whilst the findings described were seen in the majority of cases in both diagnostic groups, they should be confirmed in larger future studies. The issue of sample size is particularly relevant with regard to accompanying persons. Ideally we would have a large number of interactions with APs and a large number without in both diagnostic groups to enable the comparison of the interactional features.

The differentiating diagnostic value of our interactional and linguistic observations should be confirmed a) in a future prospective study in which the analyst is unaware of the clinical diagnosis at the time of analysis, and b) for patients speaking languages other than English (who may communicate differently with health professionals) [55, 56].

Whilst our approach using CA on memory clinic data has yielded a number of observations, which may help healthcare practitioners with the diagnostic process in the memory clinic, our list of potentially differentiating features is unlikely to be complete. The more extensive research that has been carried out on seizure clinic encounters has revealed that other linguistic techniques (including metaphor

analysis, focussed content analysis or phonological studies) and statistical methods can yield additional insights [17, 57, 58]. Additional diagnostic pointers may also be described using CA, for instance by focussing more on the contributions of accompanying persons.

4.3 Practice implications

Despite these limitations, our findings demonstrate that a conversation profile of patients' contributions to outpatient clinic encounters in the memory clinic has the potential to aid the diagnostic process [59]. Whilst our study was conducted in a hospital-based specialist memory clinic, these profiles could be useful in both primary and secondary care settings. Attending to conversational cues could aid the screening and referral process from primary care, which would be important in facilitating earlier diagnosis of ND without overwhelming specialist services.

Beyond the issue of helping with the differential diagnosis, references to conversational observations in the explanation of the memory complaints given to the patient may make these explanations more acceptable or effective. For instance, a doctor may want to reassure a patient with FMD that they are unlikely to be experiencing symptoms of dementia because they were able to provide a lot of detail when relating experiences of apparent memory failures. Patients presenting with memory failure complaints may also experience the initial open discussion as less stressful and anxiety-provoking than other diagnostic processes, such as cognitive screening tools [19].

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No conflicts of interest to declare.

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Table 1

Table 1 - Patient details

		FMD group	ND group	Difference
Age	Median (range)	60 (47-80)	66 (51-78)	ns (p=.428) ¹
Education	Median (range)	15 (10-17)	14.5 (10-16)	ns (p=1.000) ¹
PHQ-9	Median (range)	6 (0-14)	2.5 (1-22)	ns (p=.688) ¹
GAD-7	Median (range)	4 (0-11)	3.5 (0-18)	ns (p=1.000) ¹
% accompanied	Percentage	40.0%	90.9%	P<0.008 ²
% female	Percentage	66.70%	45.50%	ns (p=.689) ²

¹Fischer Exact Significance; ²Chi-Square test

Notes

Education:

Measured in total years in education

PHQ-9 Depression Severity scoring:

0-5 = mild; 6-10 = moderate; 11-15 = moderately severe; 16-20 = severe depression

GAD-7 Anxiety Severity scoring:

0-5 mild; 6-10 moderate; 11-15 moderately severe anxiety; 15-21 severe anxiety

Figures 1-8

Figure 1 - 048 (dementia, accompanied)		
1	Neu	Um- (5) Do you know the reasons why you've been referred to this clinic
2		and, and who's more concerned.
3		(0.7)
4	AP	((Coughs)) Right, well- ((coughs)) sorry (0.5) um I'll, I'll explain that er
5		when (.) ((Patient name)) had um, when she was um ((tuts)) (0.5) she left
6		work in 2011 about er- I got her to er- in February about 2011 to see the
7		GP because she was having (.) er problems at work.
8	Neu	Mm hmm,
9		((conversation between Neu and AP continues in similar pattern))

Figure 2 - 034 (FMD, accompanied)

1	Neu	And er meeting your wife?
2	Pat	Yes I can remember meeting my wife (.) bowling alley ((turns to
3		AP))yeah.
4	AP	[[((nods))
5	Neu	So, er and then: getting married?

Figure 3 - 040 (FMD, unaccompanied)

1	Neu	Yeah (2) Um, and can you (.) tell me the last time it happened to you?
2	Pat	Er, yesterday, yesterday, yeah=
3	Neu	=And what happened?
4	Pat	Um, I- I was um, we were out walking with, with friends and um we were
5		having a conversation (.) and er- we were talking about the economy,
6		a:nd um (1.3) I- I was having the conversation (.) I was talking about
7		Italy, I remember it exactly, talking about Italy, and I got to the- to the
8		word economy and I couldn't remember it, <I couldn't remember the word
9		economy>, and my sentence, everything just stopped, it was like phew
10		((hands motion hitting a wall)) (1.6) and everybody went (1) "And?" (0.9)
11		And I- I just- well I just stood there, what- what- I just couldn't get
12		anything out, couldn't (.) <I couldn't think of the word> economy
13		((continues))

Figure 4 - 056 (dementia, accompanied)

1	Neu	How's er: reading, writing, spelling?
2	Pat	Erm (.) <reading> (.) I read an awful lot (.) however, I have- and the only
3		way I've noticed it is, well we've got a three year old grandson and I=
4	AP	= Oh yeah.
5		((27 lines of talk lasting 51 seconds about the patient's difficulties reading
6		stories omitted))
7	Neu	OK. How's your spelling writing?
8	Pat	I think me- writing's deteriorated (.) Um (1.5) spelling?

Figure 5 - 048 (dementia, accompanied)

1	Neu	Where's your favourite place that you've been in the world?
2		(2.4)
3	Pat	Oh it's hard to say isn't it? ((laughter))
4	Neu	If you had to have maybe your top five then?
5		(1.8)
6	Pat	Top five? ((turns to AP and back))
7	Neu	Which of your journeys or travels sort of stands out most?
8	Pat	Latin America.
9	Neu	And whereabouts in Latin America did you go?
10	Pat	All over.
11		(2.6)
12	Neu	Can you tell me which- which of those countries, which ones did you
13		visit?
14		(3.6)
15	Neu	And were you travelling on your own or, were you in a group, or,
16	Pat	With my husband most of the [time.
17	Neu	[Right. And how many years ago was that?
18		(2.0)
19	Pat	Two three, ((turn to AP)) more?
20	AP	A bit more than that, yeah.
21	Neu	OK. Can you remember any, the names of any places you went to or
22		what you saw?
23	Pat	Not offhand. (2.0) Went all over, you see. ((laughter))

Figure 6 - 033 (dementia, accompanied)

1	Neu	And could you, give me an example of the last time your memory, let you
2		down?
3		(1.5)
4	Pat	Um: ((turn to AP1))
5		(2.8)
6	AP1	In the car you've lost your sense of direction (.) does that count?
7	Pat	Right ((nods))
8		((Pat and AP1 laugh))

Figure 7 - 004 (FMD, unaccompanied)

1	Neu	So where are you from originally?
2	Pat	Um, I come from ((Country name)) (.) but I was, my father was a
3		missionary in India and I was there until I was fourteen=
4	Neu	Mm hmm.
5	Pat	=So I came back from India when I was fourteen in 1948 (0.6) um then I
6		went to university in ((City name)).

Figure 8 - 048 (Dementia, accompanied)

1	Neu	And what did you do first after leaving school?
2		(2.5)
3	Neu	Did you go onto college or: did you work or-
4	Pat	Yeah, I worked.
5	Neu	And what was your first job after leaving school?
6		(6.7)
7	Neu	Can you remember what your first job was?
8		(2.9)
9	Pat	Not offhand.
10	Neu	Okay.