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Adapting to conversation with semantic dementia: using enactment as a compensatory strategy in everyday social interaction

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Abstract

Background—Studies to date in semantic dementia have examined communication in clinical or experimental settings. There is a paucity of research describing the everyday interactional skills and difficulties seen in this condition.

Aims—To examine the everyday conversation, at home, of an individual with semantic dementia.

Methods & Procedures—A 71-year-old man with semantic dementia and his wife were given a video camera and asked to record natural conversation in the home situation with no researcher present. Recordings were also made in the home environment, with the individual with semantic dementia in conversation with a member of the research team. Conversation analysis was used to transcribe and analyse the data. Recurring features were noted to identify conversational patterns.

Outcomes & Results—Analysis demonstrated a repeated practice by the speaker with semantic dementia of acting out a diversity of scenes (enactment). As such, the speaker regularly used direct reported speech along with paralinguistic features (such as pitch and loudness) and non-vocal communication (such as body posture, pointing and facial expression) as an adaptive strategy to communicate with others in conversation.

Conclusions & Implications—This case shows that while severe difficulties may be present on neuropsychological assessment, relatively effective communicative strategies may be evident in conversation. A repeated practice of enactment in conversation allowed this individual to act out, or perform what he wanted to say, allowing him to generate a greater level of meaningful communication than his limited vocabulary alone could achieve through describing the events

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concerned. Such spontaneously acquired adaptive strategies require further attention in both research and clinical settings in semantic dementia and analysis of interaction in this condition, using conversation analysis, may be helpful.

Keywords

semantic dementia; conversation; enactment; adaptation; compensatory strategy

Introduction

Semantic dementia, also termed the ‘semantic variant of primary progressive aphasia’, is a type of frontotemporal dementia with a progressive and striking receptive and expressive communication disorder (Neary *et al.* 1998, Gorno-Tempini *et al.* 2011). It arises from a progressive erosion of semantic memory affecting all modalities due to bilateral, often asymmetrical, damage to the anterior temporal lobes (Hodges and Patterson 2007). In semantic dementia, the central deficit in semantic memory leads to difficulty attaching meaning to, and therefore recognizing and understanding, words, objects, faces, sounds, smells, touch and tastes (Hodges and Patterson 2007). Expressive speech is fluent with increasing difficulty accessing content words and an increased use of vague and empty terms, pronouns and proforms (e.g. ‘he’, ‘this’, ‘that one’, ‘over there’), both within naming tests (Gorno-Tempini *et al.* 2011) and experimental discourse samples (Kave *et al.* 2007). In contrast to Alzheimer’s disease, visuo-spatial skills are well preserved and individuals may retain skills with recent memory for some time into the condition. Reports of changes in personality and behaviour are common (Hodges and Patterson 2007).

Experimental relearning studies have focused on the underlying language impairment, particularly whether individuals with semantic dementia can relearn ‘lost’ vocabulary items, often with variable results in terms of maintenance and generalizability (for a review of this area, see Croot *et al.* 2009). In the general field of dementia, a broader focus is often advocated where fostering positive interactions from healthy others with the person with dementia is seen as crucial (Sabat 2008). However, interactional approaches to management in semantic dementia remain to be systematically explored. In a case report, Wong *et al.* (2009) used a discourse-based intervention that focused on the residual abilities of the person with semantic dementia, including the use of non-verbal communication and used this in training the caregiver to foster natural communication. Whilst the results of this study were descriptive, this approach may be promising. It is clear that the pattern of impairment in semantic dementia is different from more typical dementias, such as Alzheimer’s disease; however, far less is known about how advice to caregivers should differ from communication advice generally in dementia. Moreover, there is a paucity of studies describing the everyday interactional skills and difficulties seen in semantic dementia, with most research focusing on performance in test situations. Given that many clinical referrals request advice to family caregivers, there is a need to understand the everyday communication issues in living with semantic dementia. Advice and information can then be realistically tailored to the specific challenges in this condition.

The data presented here are from an in-depth case study examining life for one family living with semantic dementia. The aim of this work was to develop an understanding of the everyday interactional issues in the home situation. This paper explores the natural interaction of the individual with semantic dementia and outlines a repeated method used by the person of acting out events and scenes, an activity which is referred to as enactment (Wilkinson *et al.* 2010, Goodwin 1990). Enactment has been defined as employment of direct reported speech and/or other behaviour such as gesture/body movement and/or prosody to depict aspects of reported scenes or events (Goodwin 1990, Streeck and Knapp 1992). There is a subtle, but important, distinction here between ‘describing’ an event or action using words to tell about it, and ‘depicting’ an event using verbal and non-verbal behaviour to show, or perform, aspects of the scene so a recipient can experience them, as if at first hand. Direct reported speech is a means of showing or presenting to a recipient the actual words used in someone’s talk (e.g. ‘he said “I’m really furious”’) as opposed to indirect reported speech where the words are embedded within a sentence frame and describe what someone said (e.g. ‘he said he was really furious’). Direct reported speech also allows the speaker to present features of the delivery of the reported talk; for instance, in the direct reported speech example above, ‘I’m really furious’ could be delivered with ‘angry’ prosody and gestures adding to the depiction of the speaker’s fury, while such features of the delivery are absent in the indirect reported speech version.

Enactment is one form of iconicity in talk (Clark and Gerrig 1990). ‘Iconicity’ is a term used to describe behaviours where there is a resemblance between form and meaning. Other forms of iconicity include iconic gestures (where the form of the gesture can be understood to be depicting a particular object or action) and ‘temporal iconicity’ where the order of activities in real life is also reflected in speech order (e.g. ‘I came, I saw, I conquered’). Enactment is iconic in that the meaning of the reported talk is shown to the recipient through presenting the actual words used in the talk and how they were used. This paper explores the use of enactment by a man with semantic dementia in conversation, which appears striking both in terms of his regular and competent use of this ‘compensatory strategy’ (Simmons-Mackie and Damico 1997) and in light of the fact that he presented with severe language and other impairments on formal language testing. Simmons-Mackie and Damico (1997), when studying stroke aphasia and primary progressive aphasia, highlight that strategies used by those with communication difficulties not only meet transactional goals, i.e. to provide information, they also meet interactional goals, e.g. to take a turn, or progress the conversation. Thus, for those with a severe language disorder, such as advanced semantic dementia, successful strategies may be as much about meeting interactional goals as information exchange and this will be explored with respect to this individual.

Methods and procedure

Conversation analysis (CA) procedures (Sidnell 2010) were used for data collection, transcription and analysis in order to observe and analyse directly the skills and difficulties present in conversation. CA is a qualitative research method that ‘aims to describe, analyse and understand talk as a basic and constitutive feature of human social life’ (Sidnell 2010: 1). CA analyses the part that all parties play in a given communicative context and thus talk is seen not just as the exchange of information by two ‘speaker-hearers’, but as a mutually

collaborative act where each contribution takes account of, and is based upon, the previous contribution (Sidnell 2010, Schegloff 2003). CA has been used to explore the skills and challenges evident within everyday conversation for a range of conditions including aphasia (Wilkinson 1999, Goodwin 2003) and dementias such as Alzheimer's disease, Lewy Body dementia and behavioural variant frontotemporal dementia (Perkins *et al.* 1998, Whitworth *et al.* 1999, Mikesell 2010). However, CA has not been used to study everyday conversation in semantic dementia. CA is a data-driven qualitative method and as such observable features uncovered during examination of the data drive the analysis rather than a prior hypothesis. Thus, this research did not set out to study enactment in semantic dementia; rather, the repeated use of enactment became observable following detailed data analysis.

Participants were given a video camera and asked to record natural conversation in the home situation. They were free to choose where and when they recorded and researchers were not present when such recordings were made. Recordings were also made in the home environment of the individual with semantic dementia in conversation with a member of the research team.

Six videos were recorded on different occasions with the participant talking to his wife, son and the researcher (a total of 44:05 min). Analysis of the data involved repeated viewings of the recordings by two of the authors and recurring features were noted in order to uncover patterns within the data. On inspection, a recurring practice was observed where the participant with semantic dementia would 'act out' actions and events using enactment. The family had commented on this behaviour during interviews and this had also been documented in field notes following earlier research visits. Given the repeated presence of this behaviour on the videos, the family report and direct observation, this area was chosen for further in-depth analysis.

Using methods outlined by Sidnell (2010) a collection of examples of enactment were made and subjected to detailed analysis. Verbal, paralinguistic (e.g. intonation, stress) and kinesic behaviours (e.g. bodily movement, pointing) were transcribed. To capture the simultaneous and integrated nature of these behaviours, kinesic behaviours were transcribed underneath and are presented here in double parentheses and, e.g. *((two hands forward))*. Direct reported speech is presented in bold and italic, e.g. ***oh yeah we need to get those***. These and other transcription conventions are outlined in Appendix A. Four extended examples from this collection are presented here.

The study was approved by a National Health Service Registered Ethics Committee and was also approved by the research governance department at the NHS Trust where the research took place. All participants, including the person with semantic dementia, consented to take part. Names and relevant biographical details were changed in order for those involved to remain anonymous.

Participants

Doug retired as a lecturer of engineering in 2002. He lived with his wife Karina, who still ran her own business. They had been married for 45 years. At the time of our first meeting (January 2011) they were both 71 years of age. They had regular contact with their son,

Stuart, who lived close by. Doug had been known to mental health services since his diagnosis of semantic dementia in 2006 and had regular contact with the local speech and language therapist (SLT) within this service. His diagnosis was given at a tertiary specialist diagnostic centre with an international reputation and extensive peer reviewed research in semantic dementia, using typical diagnostic criteria and assessments (Neary *et al.* 1998). At diagnosis Doug was experiencing severe word-finding problems, semantic loss on verbal and conceptual tasks, surface dyslexia but with preserved repetition, day-to-day memory and spatial skills. This service has reviewed him 6 monthly since to track his condition.

For this study a small battery of neuropsychological assessments demonstrated Doug's severe language disorder with underlying semantic loss, in the context of preserved visuo-spatial function. Whilst memory and orientation were impaired on testing, Doug was able to retain and report many events from his day-to-day memory. He was unable to repeat complex words and sentences but could easily repeat simple everyday words and simple sentences. Thus, his performance was in keeping with a diagnosis of semantic dementia in the moderate to later stages and is consistent with other case reports at this stage (Jefferies *et al.* 2006). Table 1 sets out the results of these assessments.

The carer interview from the Conversation Analysis Profile in Cognitive Impairment (Perkins *et al.* 1997) revealed multiple difficulties but with particular problems with Doug's word finding, over use of favourite topics, minimal acknowledgements (when not understanding) and difficulty in being more specific when in difficulty. There were no reports of difficulty with articulation or prosody and Doug was reported to use his hands now much more when talking than prior to his dementia.

Analysis

A recurrent and striking feature of Doug's behaviour in conversation was his tendency to rely on enactment; he would regularly depict, or perform, his or others' talk or thoughts, using direct reported speech, prosody and body movement as a form of communication. Across the 44:05 min of video Doug used 54 utterances containing enactment with direct reported speech. In contrast only one such enactment was used by the researcher and none was used by his wife or son.

Four extended examples have been chosen from the data to illustrate this practice and are grounded in everyday acts of social life; shopping; shopping for shirts; discussing how Doug spent his weekend; and how Doug initiates and sustains a conversation. In the first two, Doug talks to his wife and the enactment allows him to use his intact indexical abilities, especially pointing and using proforms such as personal pronouns (e.g. *he, she, it*), demonstrative pronouns (e.g. *this, that, these*), indefinite pronouns, such as *one*, and proverbs such as *do*. In the second two examples (Examples 3 and 4), Doug is talking to the researcher and is able to use direct reported speech and other behaviour to enact not only a single speaker's output, but also that of two or more speakers.

Overall, these four extracts indicate that Doug is able to use enactment to depict, and thus communicate, events that he would almost certainly be unable to describe verbally with the

same effectiveness. This strategy also allows him to convey information and to perform important interactional goals such as take his turn and progress the conversation.

Each example starts with Doug's co-participant asking him a question or producing another action to elicit a response from him. While Doug is regularly able to respond to his co-participant (e.g. by starting to answer the question), in each case his turn quickly takes the form of an enactment. In each of these examples, the co-participant is able to make some sense of what Doug may be conveying through the enactment, as evidenced by their response, e.g. summarizing what they have been told or by progressing the topic. As such, these enactments are a relatively successful means of communication for Doug.

Example 1

The following example is taken from a conversation between Doug and his wife Karina (marked in the transcript examples as 'D' and 'K' respectively) where they are talking about going to the shops. This extract, and some of the later ones, are divided into separate sections for ease of reading and analysis. At the start of the extract Karina makes a tentative proposal to Doug about going shopping:

```

1a)
001 K So tomorow then after Susannah's been I think
002 we should (1.1) go shopping
003 (2.2)
004 D ye I [ne- ]
005 K [d'you]
006 D yeah I do need some sho- we need some
007 shopping we're [other]wise we'll be running
008 K [mmm ]
009 D around saying [where's where's this and
010 [(hands & eyes side to side
011 where's the other and blimey no we'll we'll go out]
012 .. tapping on the table.....points 'out']
013 out and and get what we can

```

Initially in lines 004 and 006–007 Doug's response conventionally addresses the question and he uses the lexical item 'shopping', provided by Karina. His response thus appears to relate to the 'here-and-now' scene of the current conversation. However, within line 007 Doug's intonation changes, indicating he is moving into an enacted scene. In lines 007–013 he acts out what would happen if they did not go to the shops, effectively depicting their search of the house with words, body and gaze. Thus, verbally he says 'we'll be running around saying "*where's this and where's the other*"' (009–011) using direct reported speech, whilst his body and eyes dart about as if he is searching the house in the enacted scene. He uses proforms '*this*' (009) and '*the other*' (011), which, on the surface, are empty. However, from the broader interactional context that he has created, it is clear that these refer to items in the house and thus the enactment enables the listener to recover some degree of meaning or referent for the proform. Proforms and other indexical resources are commonly used in direct reported speech (Holt 1996) and at least in this sense Doug's use of them here is appropriate.

Following this, perhaps in an attempt to ascertain a precise answer from Doug, Karina then asks if there is anything *in particular* they may need:

1b)
 015 K so is there anything in particular you can think of
 016 that we might need or:
 017 (2.2)
 018 D really (at) at that at thats: (1.7) /s:/ you
 019 cou- as y you think about (.).what have we got
 020 we got to take when we get there ans so we can
 021 (2.1) an an say **oh yeah we [need to get those and]**
 022 [(2 hands holding)]
 023 then **we've got to go and [get the other ones**
 024 [(L hand one side...
 025 and **we got to go on that ways]** and and (1.2) you
 026 [...R hand to other side)])
 027 just you walking around and making con
 028 conversations on in relation to the the actual
 029 (2.4) °items that are° (0.6) you're looking for
 030 [and that's] that's the
 031 K [Mhm]

In lines 018–019 Doug’s speech is hard to follow and he is having some difficulty formulating his response and accessing the precise words, as evident by word repetitions, pauses and abandoned attempts at words, giving his speech a dysfluent quality. Karina’s question is asking for Doug to provide the items they need from the shop and this will be difficult for Doug because of his difficulty with word retrieval, which is likely to be the source of his dysfluency. Within line 019 he begins to talk and move as though he were in the shop itself: ‘what have we got we got to take when we get there’, thus moving from the here-and-now scene into the enacted scene. In line 021 he begins to depict what he would say if he was present in the shop, via direct reported speech (below in bold), and do, via body movements (below in brackets), in a sequence of three distinct utterances:

Line 021–022: an an say **oh yeah we need to get those** ((two handed ‘picking up’ in front))

Line 023–024: and then **we’ve got to go and get the other ones** ((left hand point to left side))

Line 025–026: and **we got to go on that ways** ((right hand point to right side))

Here proforms are used (i.e. ‘*those*’, ‘*the other ones*’, ‘*that ways*’), and again, because of the context, the general meaning is recoverable for the listener. Thus, ‘*we need to get those*’ is accompanied by a two-handed ‘picking up’ movement and it is clear this is an item in the shop. Doug uses speech, body movement and gaze to depict three different actions that occur. In particular, prosody is used in a dynamic fashion and this is important for making these utterances hearable as direct reported speech. The actions are produced sequentially, thus giving the enactment a temporal sequence (e.g. ‘and then’ in lines 021–023) and a degree of temporal iconicity (Fischer and Nanny 2001). Additionally, his use of body movement and pointing, to the front, the left and right, helps create a spatial dimension to the scene along with movement within it, thus giving the enactment a high degree of iconicity in terms of space.

Doug then continues with his response:

1c)

```

032 D thing is sometimes you you go: and you think
033 [oh blimey forgot that one and you turn round
034 [(hand forward ... acting out turning right
035 and walk back to get it and carry on] the next
036 hand back & right ...body forward))]
037 bit
038 K Mhm↑ ok did ya and you've tried your (0.8)
039 new jumper thing on haven't you that you
040 bought

```

In lines 032–033 Doug uses direct reported thought (Haakana 2007) using dynamic prosody: ‘you think “*oh blimey forgot that one*”’ where the response token “*oh blimey*” gives emphasis as to how he might feel at the time. Again, there is use of a proform ‘*that one*’ (line 033) and, together with pointing, some possible meaning is recoverable from the context. Body and head movements indicate physically turning around to his right and moving his body in that direction before turning around again and continuing forwards, depicting the spatial elements of the enacted scene.

Example 1 illustrates the difficulty Doug has with retrieving precise nominal terms, i.e. the items he thinks are required from the shop, but it also shows the skills he has with enactment and how he can use this as a strategy to produce his contribution to the conversation and convey information to the listener. Clearly, however, this does also illustrate the difficulty for Karina, in that Doug does not address the question of ‘*what*’ they need from the shop, preferring to act out what he would ‘*do*’ in the shop. Thus, whilst his response is ‘on topic’ he is not ‘on answer’ in that he does not provide a precise response to what Karina has asked him in lines 001–002 and 015–016. Despite this, Karina’s response in lines 038–040 shows she has at least ‘got the gist’ of what Doug is conveying with this enactment; she does not ask for clarification but is, instead, able to progress the conversation, adding to the topic of shopping by asking Doug about his new jumper (lines 037–038).

Example 2

Example 2 is taken from later in the same conversation. This example is split into 2a) and 2b). The conversation has progressed and in Example 2a) Karina asks a question about shirts. The initial part of Doug’s reply appears to indicate he’s quite happy with the shirts he has, thus addressing the question at hand but, as his reply unfolds further, Doug uses enactment to depict what he would *do* in the shop when looking for shirts:

2a)

```

001 K is there anything else↑ now that we could have
002 a look at in the sales do you think or you think
003 (1.4)
004 D er:[mmm ]
005 K [Have] you got everything↑(.)couple of sh-
006 new shirts possibly
007 D Well I've got some sh ye:s (0.5) erm (1.3) I'm
008 mine- I'm I'm quite happy with em but er hh
009 (0.7) its just one of those things I quite
010 enjoy [going to this part and w what I've got
011 [(2 hands 'going' .....
012 (0.8)and then I can look down and say oh yes and
013 .....hand across and eye point
014 going for a walk and I'll I'll take this one]
015 ..... 2 hand grasp))]

```

The scene Doug creates begins in line 009 as he moves from the here-and-now scene into the enacted scene. Here he is placing himself in the shop looking at shirts. In lines 012–014 Doug uses direct reported speech ‘*oh yes*’ and ‘*I’ll I’ll take this one*’ to indicate his talk and/or thoughts in the situation. In this example he uses his eye gaze as if looking at the items in the shop, and uses his hands as if pointing to or holding items, e.g. ‘*I’ll take this one*’ is accompanied by a two handed movement of picking an item. Again these uses of proforms are appropriate and their meaning is recoverable from the context. For example, ‘*this one*’ in line 014 refers to an item, most likely from the context, a shirt, in the ‘virtual shop’ which Doug has depicted.

Following a brief interchange about a high street shop, Karina then attempts to refocus the conversation by suggesting to Doug that perhaps they could throw some of his existing shirts away (Example 2b) below). The initial part of his response in line 020 appears to address her suggestion, almost as though he might be agreeable to this. However, in line 022 Doug moves again from the here-and-now scene of the conversation into an enacted scene:

```

2b)
016 K I think we could (0.6) throw a couple of your
017 old shirts out really (1.5) cos the colours are
018 a bit worn
019 (1.1)
020 D [Well we could] have we c- we can de- yeah
021 K [aren't they ]
022 D it's worth going and and [looking very closely]
023 [2 hands and tap ]
024 saying [I I really want that] or no [I don't
025 [ ((2 hand point)) ] [ ((2 hand
026 want those ] and that that [will be]
027 brush aside)]
028 K [mm you ] can
029 choose can't you [you can choose ]
030 D [that that will make] some sense
031 yeah

```

Within extract 2b) Doug’s enactment seems to be a depiction of himself as if he is standing by his wardrobe examining his shirts. He begins in line 022 by setting the scene, with himself in it: ‘it’s worth going and and looking very closely’, before moving into direct reported speech: ‘saying “*I I really want that*”’ (line 024), ‘*no I don’t want those*’ (lines 024–026). He uses proforms ‘*that*’ (line 024) and ‘*those*’ (line 026) and the scene he has created enables the listener to interpret these as ‘shirts’ (as seen from Karina’s mention of these in lines 016–018). As with Example 1, the enactment is broadly successful as a communication method, since Karina, in lines 028–029, shows she understands Doug’s enactment to have been about him choosing between his shirts.

Example 3

In Examples 3 and 4 Doug is able to produce instances of enactment where two or more speakers are depicted together in conversation. These examples show Doug’s ability to create complex scenes, involving not just his own behaviour but that of others within his talk and to do this through often subtle and quick-changing deployment of direct reported speech, prosody, facial expression, body movements and gaze. They also show his ability to perform subtle and high-level interactional and pragmatic functions, such as implicitly conveying something to his interlocutor in the here-and-now conversation by means of depicting conversational exchanges between two or more participants in the enacted scene.

Example 3 is taken from a conversation with Doug talking to Jacqueline, one of the research team with whom he was familiar due to participation in prior research tasks (marked as speaker 'J' in Examples 3 and 4). This example displays two instances of 'dialogic enactment' (i.e. the depiction of a conversation between two speakers). Doug is asked about what he did at the weekend and, after making a comment about the rain, he says he went for a walk and then went up to the local (Spar) shop. In this first part of the sequence he appears to address the question and topic at hand:

```

3)
001 J So what did you do at the weekend then anything
002 (.)nice?
003 D When it wasn't raining
.
((Some comments omitted here about the rain and Doug talking
about going to the shop))
.
017 D I know most of the people there you see I-
018 J Is that at the Spar shop
019 D Yes sorry I don't say do I I keep forgetting at
020 the spar shop
021 J yeah
022 D Because it's got everything that er an I I go
023 up and say [hello ] and there's this one one wo-
024 [(point)]
025 woman I say how's things and and they they just
026 go [(0.8) ] I said and I [(0.6) ] for you as
027 [(face)] [(face)]
028 well hhhhhh
029 J hh mmm
030 D hhh its er
031 J that's ↑nice
032 D oh yeah "yeah yeah"
033 J pass the time of ↑day
034 D we don't le- forget that n- [she- she's
035 [(2 hands
036 doin what she's doin and then she goes right I
037 ...busy hand movements...
038 said fine and I just walk to the next bit

```

In lines 022–023 Doug moves into an enactment scene involving the local shop. Thus, he says: 'I go up and say "**hello**"', depicting, through direct reported speech, the words he would have used in the shop. His prosody changes, with '**hello**' becoming more dynamic and he points with both his hand and his eyes in front of him (and away from Jacqueline) as though the person in the shop is standing in front of him. Within lines 025–028 is a sequence of direct reported speech with Doug enacting a conversation consisting of both his words and those of the woman in the shop, i.e. a sequence of dialogic enactment:

Line 025 – 'I say "**how's things**"'

Line 025–027 – 'they just go "((facial expression))"'

Line 026–028: 'I said "**and I** ((facial expression)) **for you as well**"'

One function of Doug's dialogical enactment here is to demonstrate or depict that he has a good relationship with the people in the local shop. Indeed, the family report the theme of his 'friends' at the local shop is a common one in Doug's talk generally, as going to the shop each day is one of the important routines in his life. Here this friendship/good relationship is shown by Doug depicting himself in the type of regular interaction he has with one of the shop workers that he knows. He greets her and asks her '**how's things**' (line 025) and she responds with a facial expression which appears, from Doug's depiction, to convey discontent, marking that things are not very good/are boring, etc. (lines 025–028). Through

choosing to demonstrate this enquiry about and sharing of more personal information Doug is showing Jacqueline that the relationship depicted here is more than simply that of a routine customer-service provider but rather one which is more personal and friend-like. While his response to the shop worker's answer (lines 026–028) is more difficult to interpret, he appears to be trying to depict that he is empathizing with her through the use of the same non-verbal display of discontent. The overall effect is humorous, as marked by Doug's laughter (line 028) and Jacqueline's reciprocal laughter (line 029). In lines 031 and 033, Jacqueline shows that she has not only understood the meaning of Doug's enactment in general terms but also that she has picked up on his attempt to depict the good relationship between himself and the store worker, i.e. she provides a summary of what he has been depicting in the form of 'that's nice ... pass the time of day'.

Lines 036–038 contain Doug depicting the end of the interaction. Here he communicates how they both acknowledge that they cannot stand about and chat all day—even though, as good acquaintances, they might like to—because there are things to be done. Thus, Doug's depiction of the woman 'she goes "**right**"'—is said with a degree of force that may indicate that she has to get on with her work. He then depicts himself as replying '**fine**', before going on with his shopping. At this point in the conversation he then returns to descriptive talk (line 038: 'I just walk to the next bit').

Example 4

Whilst Example 3 showed Doug depicting himself talking to one other person, Example 4 illustrates a further example of this and also displays Doug's ability to act out talking to multiple others, in the form of 'multi-party dialogic enactment' (i.e. a depiction of more than two speakers in conversation). This example is split into 4a) and 4b). In 4a) Jacqueline and Doug are in conversation and early in the encounter Jacqueline asks Doug about his speech difficulties. Doug starts off his response by acknowledging some difficulties before saying 'it's never been a problem'. At this point his reply is nothing out of the ordinary in its form, in that it is descriptive but the next part of the conversation indicates a shift into an enactment where Doug creates a scene of another person talking to him and him responding (i.e. a dialogic enactment):

```
4a)
001 J cos for a few years now its affected (2.0)
002 your speech hasn't it its
003 D erm (0.9) y- I suppose it has in a way but its
004 never (1.1) never been a problem
005 J right ok
006 D to me if someone said you're a fool I would say
007 [oh thank god for that]
008 [({hands open . . . . .})]
009 J hhhh
```

Lines 006–007 represent Doug talking to one other person and using direct reported speech to depict exactly what the other party may say, i.e. 'If someone said "**you're a fool**"', and then his reply, i.e. 'I would say "**oh thank god for that**"'. This whole sequence (rather than just the phrase '**oh thank god for that**') is reported by the family to be a sequence they have seen Doug perform on numerous occasions and, although hard to ascertain, appears to them to mean that he does not care what other people think. Thus, this represents a type of stereotypical phrase, partly in the form of an enactment.

Doug then goes on to say:

4b)

```

010 D n- that and an another thing another thing you
011 say [oh (1.2) where are we going and some would
012 [(L hand up gaining attention, left hand
013 say de de de say oh right thanks]
014 point beats...R hand up)]
015 J mmmm
016 D er and thats but [it's u usually it's not] it's
017 [(hands neg shake)]
018 just you talk (to people) and you just say
020 [yeah it's I've had a brilliant day did you
021 hand and eye points to left.....
022 ↑have a good night yeah that was brilliant
023 .points to front.....points to right
024 what de de] and [it's most of the time ]
025 & front))] [(2 hands up by face))]
026 J yeah
027 D it really really is
028 J mmm yeah yeah
029 D erm
030 J so it sounds li- (checked camera) sounds like
031 you keep carrying on regardless then (1.1)
032 you just carry on
033 D oh yeah
034 J don't let it stop you doing things
035 D oh no

```

The depiction here is of three people in conversation with each other, i.e. a multi-party enactment. As with Example 3, the depicted conversation allows Doug implicitly to convey something to Jacqueline which would be difficult for him to describe. First, in lines 010–014 he produces a three-part sequence all with direct reported speech. The utterances are said by two different people, one of whom appears to be Doug:

Line 010–011: ‘you say “**oh where are we going**” ((left hand up gaining attention))

Line 011–014: ‘some would say “**de de de**” ((left hand pointing on beats of de de de))

Line 013–014: ‘say “**oh right thanks**” ((right hand up, acknowledgement))

Doug is conveying himself asking for some assistance in the form of a request for information (line 011) and, after it is given (line 013), thanking the person for it (line 013). Having acknowledged sometimes needing some assistance or not always being fully competent, Doug then goes on to convey, through enactment, that usually the situation is not like that and instead he just talks to people (lines 016–018). This typical ‘no-problem’ form of conversation is then depicted by Doug in enactment where he appears to be talking with at least two other speakers and where the conversation is straightforward:

Line 018–021: ‘you just say “**yeah it's I've had a brilliant day**” ((hand and eye point to left side))

Line 020–023: ‘**Did you have a good night**’ ((hand and eye point to front))

Line 020–023: ‘**Yeah that was brilliant**’ ((hand and eye point to right))

Line 024–025: ‘**what de de**’ ((point to front again))

Doug is able to use intonation competently and subtly to indicate that different instances of the reported speech here are said by separate speakers. It is also noticeable that his

simultaneous hand pointing and eye gaze indicates three locations in which speakers are standing in relation to him: to the left, the front and to the right. As in Example 1, Doug is making use of a form of iconicity related to space i.e. the spatial relationships between Doug and the other speakers are shown through Doug's body movement in relation to these depicted speakers, with no need to describe their location.

As in Example 3, Jacqueline's display of understanding captures what Doug has been implicitly conveying by means of these two depicted conversations, i.e. 'sounds like you keep carrying on regardless (of your speech difficulties)' (lines 030–031) and 'don't let it stop you doing things' (line 034), to which Doug agrees.

Discussion

This paper has explored the natural conversation abilities of an individual, 'Doug', with semantic dementia and identified a repeated practice of enactment where direct reported speech, prosody, facial expression and body movements were used. This repeated practice allowed Doug to communicate with his conversation partner, not simply by describing events but largely by depicting them, through the use of direct quotation. This helped Doug to act out or 'show' what he wanted to communicate (with far greater verbal fluency), to sustain his turn in the conversation and to take the interaction forward. Four extended examples of this behaviour were presented. In the first two examples enactment provided a context where Doug was able to rely on his relatively good indexical abilities, including pointing and the use of proforms. This interactional context meant some meaning could be recovered by co-participants for such proforms. In the second two examples (Examples 3 and 4) Doug's ability with direct reported speech to act out not just one speaker's output, but also two or more speakers in conversations was demonstrated. Overall this practice of enactment allows Doug to generate a greater level of meaning, and his recipient a greater degree of understanding, than Doug's limited vocabulary alone could achieve through describing events. Doug's relatively competent and successful use of enactment is striking in light of his poor linguistic abilities on formal assessment, e.g. scores of zero on the Boston and Cambridge naming tests (Kaplan *et al.* 1983, Adlam *et al.* 2010) and 7/30 on the Mini Mental State Examination (MMSE) (Folstein *et al.* 1975). As such, this analysis demonstrates that examining conversation in natural settings can add greatly to our understanding of semantic dementia, as it may highlight different levels of competence (or deficit) compared with the person's performance in test situations.

Enactment as an adaptive strategy

The practice of enactment shown here is an example of adaptation to conversation in the light of communication impairment (Wilkinson *et al.* 2010). In Doug's case this compensatory strategy enables him to adapt the resources he still has at his disposal to engage in conversation with others despite the effects of the impairments associated with semantic dementia. This adaptive strategy is deployed in the absence of a reliable ability by Doug to provide verbal semantic information because of his degraded semantic system. Thus, he can more easily depict (or show), rather than describe (or tell), what he is trying to say and, at these times, it is easier to have conversations this way. This notion of enactment

as an adaptive strategy ties in with his family's spontaneous observations that Doug was now acting out events more in his conversations with them as his semantic dementia progressed. Such adaptive strategies have been explored by Simmons-Mackie and Damico (1997: 770) who redefined compensatory strategies as 'new or expanded communicative behaviour, often spontaneously acquired and systematically employed, to overcome a communicative barrier in an effort to meet both transactional and interactional communicative goals'. Using this definition it becomes possible to conceptualize strategies in individuals with significant cognitive impairment, like Doug, as naturally occurring adaptive responses which make use of various residual abilities to accomplish meaningful communicative interaction. Success is also not defined purely by information exchange (or transaction). Doug uses enactment to sustain his turn and thus progress the conversation meeting a variety of interactional goals.

Use of enactment in interaction has been studied in agrammatic aphasia where it was adopted as an adaptive interactional strategy to formulate actions and events in talk despite limited linguistic resources. Such enactments were syntactically and lexically restricted but with a variety of verbal and gestural features which permitted speakers to communicate specific meanings (Wilkinson *et al.* 2010). Doug, in contrast, retains many syntactic resources but is compromised semantically such that his enactments are accompanied by fluent speech with a lack of content words. Resources which Doug used to construct his contributions, in the light of his paucity of semantically full content words, included proforms and pointing, both of which were regularly used as part of his enactments. While displaying many linguistic and cognitive differences, Doug and the speakers with agrammatic aphasia in Wilkinson *et al.* (2010) share a common interactional strategy of enactment. In each case, this method of communication allows them to use limited resources (linguistic and/or cognitive) to produce contributions in conversation which are reasonably understandable to their recipients.

Doug has a number of resources at his disposal including preserved visuo-spatial skills, day-to-day memory, syntactic resources, skills with intonation and prosody, and ability with a range of non-verbal skills, such as pointing, body movement and facial expression. These relatively well-preserved resources allow Doug to visualize himself in a certain place and time and hold this scene in his mind and then communicate this using enactment. Thus, the preservation of autobiographical memory, a feature of semantic dementia, may be helping to sustain this visualization. In addition, Doug's enactments regularly have spatial elements, as was evident, for instance, in his use of eye gaze and pointing in Examples 1 and 4 to depict for his recipient features of the enacted scene and their spatial relation to him and to each other and this may reflect his well-preserved visuo-spatial skills, which are also a feature of the profile of people with semantic dementia (Gorno-Tempini *et al.* 2011).

Given that the deficit in semantic dementia is a central and multimodal impairment affecting expression of both speech and gesture, Doug's abilities to convey some meaning with hand and body movement may be surprising. On inspection, however, Doug's hand movements and pointing demonstrate locations, spatial representations and simple actions rather than iconic gestures of objects and object use. Whilst these provide important information for the listener and do, indeed, convey meaning, they may rely on a combination of less-impaired

spatial skills and memory alongside generic semantic knowledge. Doug was also observed to use such spatial body movements (without enactment) at other times alongside use of spatial language (e.g. 'at the top', 'round', 'left'). He rarely used body movements to communicate without speech.

Implications for practice and future research

This case highlights the need for clinicians and researchers to look beyond test data when planning therapy in semantic dementia. In their examination, Simmons-Mackie and Damico (1997) argue that understanding the type of adaptive strategies evident in spontaneous conversational behaviour is likely to be a fruitful place to begin therapy. This study indicates that this may also be the case in semantic dementia. While conversation has proved to be a useful target for therapy within aphasiology (Wilkinson and Wielaert 2012), this possibility is yet to be systematically explored in relation to dementia in general or semantic dementia in particular. The analysis of conversation can highlight interactional strengths and challenges and may uncover remaining skills in conversation—such as enactment—which are displayed by the person with semantic dementia in everyday conversation. For example, in this study, the person with dementia's relatively competent use of body movement and gaze and its integration with talk (in particular direct reported speech) have shown that a more detailed analysis of these non-vocal resources provided insights into skills which would not otherwise have been uncovered.

Although not a therapy study, the family in this case found it helpful to view the videos and remarked how much Doug was 'in the scene' when he was using enactment, thus finding a greater level of meaning in his behaviour. This led to fruitful discussions focusing on his use of body movement and how they responded to Doug in conversation. They, for example, felt it important to prioritize the flow of conversation (interaction) rather than solely focus on requesting specific and accurate information (transaction). Thus, in interviews his wife commented: 'it's not a school, (as though) it has to be right! I just know there's a word in there that isn't right but we've got the general gist of what's going on, that's fine'. Given his difficulty in being more specific when asked, for this individual, this seemed appropriate.

Adapting forms of conversation management using the principles of CA may potentially be of help to those working with people with semantic dementia. By exploring interaction with the person with dementia and their caregiver(s), clinicians may assist in helping them sustain relationships and contribute to quality of life for both, whilst focusing on goals that are important to the family. This would be consistent with broader emerging approaches within dementia care (Sabat 2008).

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Appendix A: Transcription symbols

┌ ┐	Two overlapping utterances, or a gesture which occurs at the same time as talk
LJ (0.6)	Silences are marked in seconds and tenths of seconds
(.)	A full stop in single parentheses indicates an interval of a tenth of a second or less in the stream of talk
oh:	A colon indicates an extension of the sound or syllable it follows
but-	A single dash indicates a halting, abrupt cut-off to a word or part of a word
↑↓	Marked rising and falling shifts in intonation are indicated by upward and downward pointing arrows immediately before the rise or fall
<u>stress</u>	Underlining indicates emphasis
°no°	Degree signs indicate a passage of talk which is <i>quieter</i> than the surrounding talk
h,hh	Discernible aspiration or laughter
/kæt/	Transcribed sounds or paraphasias using an IPA font
(())	Body movements, pointing, facial expression, etc. transcribed underneath in italic grey text in double parentheses
<i>Text</i>	Text in bold italics represents direct reported speech

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What this paper adds?

What is already known on the subject?

Most studies examining communication in semantic dementia have concentrated on performance on structured speech and language tasks within experimental settings. There is a paucity of research examining everyday conversation. Thus, while a great deal is known about the language and cognitive impairments evident on testing, very little is known about the communication difficulties and strengths evident in everyday conversation and, importantly, how family members interact with the person with semantic dementia.

What the study adds?

This study describes an adaptive strategy—enactment—in an individual with semantic dementia, demonstrating both skills and difficulties evident in conversation. Given the clinical aim of therapy is to improve everyday communicative function, greater understanding of such conversation issues is required in this condition.

Table 1
Summary of the neuropsychological and neuropsychiatry test result

Test	Score	Comment
Mini Mental State Examination (MMSE) (Folstein <i>et al.</i> 1975)	7/30	Brief assessment of cognition
ACE-R (Mioshi <i>et al.</i> 2006)	18/100	Preserved visuo-spatial skills, surface dyslexia evident and severe language disorder
Boston Naming Test (Kaplan <i>et al.</i> 1983)	0/12	Discontinued ($n = 60$)
Cambridge Naming Test (Adlam <i>et al.</i> 2010)	0/16	Discontinued ($n = 64$)
Cambridge Category Comprehension Test (Adlam <i>et al.</i> 2010)	20/32	Spoken word picture match semantic task, 64 items. Very slow performance, reluctant to guess, repeating target aloud, e.g. 'monkey..monkey?'. Given untimed, therefore likely to be an over-representation of skills. Discontinued at item 32 ($n = 64$). Able to repeat aloud items unable to identify
Conceptual Test–Cactus and Camel (Adlam <i>et al.</i> 2010)	1/6	Required to match the target picture to one of four others based on underlying conceptual knowledge. Discontinued unable to understand task despite repeated demonstration ($n = 64$)
Frontal Behavioural Inventory (Kertesz <i>et al.</i> 1997)	44/72	Negative behaviour score 29/36; and disinhibition score 15/36. Score indicates 'severe disease'