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How to cite:

Elliston, Brian and FitzGerald, Elizabeth (2012). Encouraging museum visitor engagement using spontaneous talk-in-interaction audio guides. In: 4th International Conference on Computer Supported Education (CSEDU 2012), 16-18 Apr 2012, Porto, Portugal.

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Version: Accepted Manuscript

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Full citation: Brian Elliston & Elizabeth FitzGerald (2012) Encouraging museum visitor engagement using spontaneous talk-in-interaction audio guides. Proceedings of the 4th International Conference on Computer Supported Education (CSEDU 2012), 16-18 April 2012, Porto, Portugal.

ENCOURAGING MUSEUM VISITOR ENGAGEMENT USING SPONTANEOUS TALK-IN-INTERACTION AUDIO GUIDES

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Keywords: Audio Guides: Mobile Learning: Conversation Analysis: Footing: Human-Computer Interaction: Informal Learning

Abstract: We describe the building and testing of a museum audio tour with content recorded as spontaneous interactive dialogue between two curators as they walked around an art gallery. The aim was to produce a guide which would increase the amount of topically relevant talk shared by people visiting a museum in groups of two or more. Conversation analysis is used to show how a pair of visitors engaged more with the content of the guide than they would have with audio produced as traditional scripted monologue. Examples of a variety of engagement types are detailed and a supporting rationale drawing on Goffman's theory of 'footing' is discussed. The approach potentially offers a low cost way for organisations involved in informal learning to produce flexible in-house audio content for mobile and e-learning, which improves visitor engagement both with the content and with one another, and leads to a more enjoyable visitor/learner experience than traditional forms of audio.

1 INTRODUCTION

We describe the development and testing of a museum audio guide with content recorded as spontaneous, interactive dialogue between two curators as they themselves walked around an art gallery. This contrasts with the traditional content of such guides, where a script is pre-prepared then recorded as a monologue. The aim was to increase the quantity of talk which those visiting the museum with friends or family would have together, as well as its 'quality', in terms of the engagement it demonstrated the visitors to be having with the exhibits and the content of the guide. 'Engagement' is taken here to mean a combination of attention, interest, enjoyment and implied learning (Falk & Dierking 1992, 2008, Allen 2002, Vavoula & Sharples 2009). The research links to aspects of the *Sotto Voce* project (Grinter *et al.* 2002, Woodruff *et al.* 2002, Woodruff & Aoki 2004), which used audio guide content designed to *mimic* the short turns of natural conversation with a view to facilitating interaction within visitor groups. It also responds to Heath and vom Lehn's (2004, 2008) criticisms of the design of museum exhibits and guides as failing to

account for visitor groups' *actual* experience of these institutions; that for people visiting with others the social and learning experience are closely linked.

We begin by describing the aims and rationale for the study and go on to describe how the audio guide was produced and tested. Using conversation and discourse analysis, we then detail how engagement with (and through) the guide was manifest in visitors' talk. Goffman's theories of footing and participation (Goffman 1974, 1981, Levinson 1988) are then drawn upon to provide an explanatory framework for the interaction, from which the study's findings can be generalised. We finish by discussing some of the limitations of the study, pragmatic issues in deploying such audio guides and the broader implications that emerge for audio in mobile and other forms of e-learning.

2 THE STUDY

Vom Lehn *et al.* (2002:15) argue, "Despite the acknowledgement of the importance of social interaction for the museum experience, research of

visitor behavior tends to concentrate on the cognitive aspects and the learning outcomes of museum visits and pays less attention to the social organization of communication and collaboration at the ‘exhibit face.’” It is as part of redressing this balance that this study can be viewed. Recent research has often blended analysis of visitors’ spoken interaction with that of their embodied action (vom Lehn 2006, vom Lehn & Heath 2007, Heath & von Lehn 2008) with the emphasis increasingly being on engagement with the exhibit directly (with a view to improving the design of ‘interactive’ exhibits) rather than through the mediation of an audio or other type of guide. However, such research has limitations when applied to exhibits which in and of themselves do not provide a learning element; unlike the interactive exhibits in many museums, a painting in a gallery, or a tree in a nature reserve lack an intrinsic ability to teach about themselves, and require some form of guidance for learning to occur. This study analysed the engagement visitors exhibited with the content of an audio guide through their verbal interactions (Stainton 2002, Hsi 2002, 2008, vom Lehn & Heath 2007, Falk and Dierking 2008, Smith & Tinio 2008), the rationale being that ‘on-topic’ interactions naturally reflect visitors’ engagement with the content of the museum itself. In assessing spontaneous dialogue guides (hereafter SDGs), we looked for points in visitors’ talk which linked directly to the spontaneous, interactive nature of the talk on the guide. Such points were taken as instances of engagement that would not have occurred when using a scripted monologue guide (hereafter SMG).

3 BUILDING AN AUDIO GUIDE WITH SPONTANEOUS DIALOGUE

3.1 Participants and Process

Two knowledgeable volunteers, referred to in this paper as ‘commentators’, were recruited from the Museums and Art Galleries Service of Nottingham City Council in Nottingham, UK. Each selected four paintings in Nottingham Castle Museum’s Long Gallery and were recorded walking round and discussing the paintings together. The commentators were briefed beforehand that they could (indeed *should*) speak about whatever came to mind (facts, opinions, anecdotes, “anything at all”), but that their aim was to record a commentary *together* for a non-

expert first-time visitor. It was stressed that they could talk as informally and casually as they liked, were free to interact with one another “as felt natural” and that they could say as much or as little as they wished about an exhibit.

3.2 Product

The recording was subsequently divided into discrete painting-by-painting commentaries varying in length from 3.54 minutes to 6.24 minutes (mean 4.44 minutes, median 4.41 minutes). Each track was analysed to identify sequence endings (Schegloff 2007) or points of topic change (Brown & Yule 1983, Gardner 1987) and between three and six pauses of two seconds each were inserted in each commentary at such points. This was to enable listeners to pause the recording without disrupting the content, but not disrupt the flow of the dialogue if left running. It is notable that the short sequences of talk commonly found in states of incipient talk (Schegloff & Sacks 1973) are naturally amenable to this process. No other editing took place. Each track was labelled with an identifying picture number and transferred to a handheld device (Personal Digital Assistant, or PDA) with integrated speaker to enable participants to hear the audio.

4 TESTING AN AUDIO GUIDE WITH SPONTANEOUS DIALOGUE

4.1 Participants and Process

Two adult volunteers were recruited from the University of Nottingham as example visitors. Both were occasional (but infrequent) museum visitors and both had in the past used SMGs. They visited the Nottingham Castle Museum, were provided with the PDA audio guide, shown its operation and how to locate paintings through the track numbering system. They were briefed that they could listen to as much or as little of each commentary as they wished, could pause and restart a commentary at will and could talk together when and as they chose. Both participants were given lapel radio microphones that recorded their spoken conversations with each other during their visit. Immediately after the visit, a semi-structured interview was held in which they were asked for their impressions of the experience and the content

of the audio, pros and cons of this type of content, and anything they felt particularly memorable.

4.2 Data Analysis

This study aimed to go beyond a user feedback approach, and to identify engagement primarily from the language data obtained during *in situ* use of the guide. The recording was transcribed into approximately 7700 words, using notation based on that of Gail Jefferson (Atkinson & Heritage 1984). In the transcription given in this paper, speakers A and B are the visitors, C and D the two commentators on the SDG. Extracts are numbered with the title of the painting under discussion. Conversation analysis (Schegloff & Sacks 1973, Sacks *et al.* 1974, Atkinson & Heritage 1984, Schegloff 2007) was used to identify visitor talk structurally dependent on the guide's content being spontaneous talk-in-interaction. 4000 transcribed words from a pair of visitors using a SMG in the same gallery some years previous (developed for the CAGE project described below) further informed the study by identifying certain interactions *not* particular to SDGs.

5 RESULTS

5.1 Overview of Visitors' Talk

Visitors attended to seven of the eight painting commentaries for their full duration (the eighth painting they talked off topic over the end of the commentary). They frequently also engaged in their own talk before, and during pauses in the commentary. A limited amount of visitor talk did overlap talk on the guide, but was always 'on-topic'; related to the guide content, the viewing experience, or comprising visitors' topical expansions. Talk accounting for the technicalities of the guide (agreeing starts, stops and volume changes) were not counted as on-topic. In related work, the CAGE project, aimed at encouraging visitor *movement* within a museum (Lonsdale *et al.* 2004, 2005, Rudman *et al.* 2008), had tested a location aware SMG in the same gallery, audio recording visitors as they went around the paintings listening to the guide and talking together. For each painting, the content of that guide became increasingly 'detailed' as it went along, and finished with a prompt for visitors

to look at similar or related paintings in the same gallery. Rudman *et al.* (2008:156) report of the CAGE project, "One group of participants was observed to spend over three minutes (a long time to spend in front of one painting) pointing out details to each other and discussing what they were hearing". The same painting was included in the SDG with audio commentary lasting six and a half minutes. Visitors were seen to attend throughout, adding 30 on-topic 'turns' of their own talk to the experience, both before and during listening (turn here refers to the successive individual contributions that go to make up a conversation, where the speakers 'take it in turns' to talk).

The number of on-topic turns produced in front of a painting by visitors using the SDG ranged from 8 to 61 (mean c.35, median 39). In contrast, a very talkative pair of visitors using the CAGE guide produced around 14 to 32 turns, in front of the eight paintings they talked *most* about (mean c.20 turns, median 17.5). Furthermore, these turns tended to be markedly shorter than those produced by the visitors with the SDG. While suggestive of possible future results with a larger participant sample, this limited comparison cannot be claimed to be truly representative; it is notoriously difficult in any event to quantify 'engagement' in anything more than a supporting role to more foregrounded qualitative methods. Moreover, factors such as visitors' time pressure, preconceived interests and the precise chronological point within a visit have hard-to-observe effects on the kinds of measures used in quantitative analyses of engagement.

5.2 Visitor Engagement

5.2.1 Multiple Voicing as Engagement

Extract 1: from 'Homer Singing his Iliad at the Gates of Athens'.

1 C The other thing that I read about
2 this I don't know if you've heard
3 this Da[vid but e:rm is that] but=
4 A [quite a nice factoid]
5 C =maybe [Lethiere] was was erm kind
6 B [Mmmmmmmmm]
7 C of having a bit of a go at his
8 patrons that he was a poor
9 neglected artist outside hhhhhh
10 the the gates of Paris maybe and
11 no one appreciated him very much
12 hhhh hhhh
13 D ahhh (.) well y- yeah maybe but I

14 would have thought a painting of
 15 this this (.)scale e::r detail and
 16 complexity which is a huge amount
 17 of work I can't believe how many
 18 hours that took (.) must have been
 19 a commission
 20 B Mmmmm
 21 (1.0)
 22 C I'm not [sure]
 23 D [Or he] was fairly sure
 24 that he could flog it to someone
 25 (1.0) I don't get the feeling that
 26 this is something he did just for
 27 himself
 28 C Don't you think so=
 29 D =I don't

At the beginning of Extract 1, speaker C at lines 1-3, 5, and 7-12 puts forward an argument, but voicing the assertion as from an 'unattributed other' with "I read about". The position is weakened ("maybe", "kind of") suggesting a limited alignment of the speakers 'personal' voice with this 'other'. However this is seemingly contradicted by the gentle closing laughter at turn end, signalling at least sympathy with the idea; incorporating the assertion into her 'personal' voice (see Goffman 1974:531 and Bakhtin 1981, 1986). In response at lines 13-19 speaker D at first makes an agreeing token, then backtracks qualifying this as "maybe", then proposes an alternative rationalised position (a common progression in spoken interactions) emphasised as *personally* voiced ("but I would have thought") and finishing with a strong assertion ("must").

Commentator C's response in line 22 mirrors the personal nature of the talk ("I'm"), but as a gentle contradiction of D's view. It prompts a strong overlapped response beginning as double voiced presentation of the speaker's voice through the artist's 'voice' (line 23, "or he was fairly sure"). Line 25 has speaker D shifting into his personal voice again which is more conciliatory ("I don't get the feeling").

This segment highlights how talk-in-interaction incorporates more 'voices', or positions within the talk than a scripted monologue could hope to, where it would be unusual to attribute a personalised voice to the narrator (who claims no ownership, or responsibility for their talk). While such narration may state differing opinions and identify their origins, the subtle shifts and negotiations of voice whereby position is developed and becomes established *across* turns in talk, are missing. The range of voices in dialogue guides (in addition to the dialogic relationship visitors find themselves in with the painting under discussion itself (Bakhtin 1981)) increase the opportunity for visitors to develop *their*

own voice through the range of positions they are offered (representing degrees of opinion and authority) and on which they can draw, and because listeners experience the *development* of ideas, rather than having established opinions presented in a 'final formulation'. The interactive elements of negotiating agreement and disagreement enable listeners to engage with the *process* of coming to a position and thus their ability and willingness to develop and express their own position.

5.2.2 Engagement through Personalization

In Extract 2, the responses of visitors at lines 6 and 9 to the preceding piece of commentary are significant in that they show incorporation into visitors' talk not only of the informational content of the guide, but the presentation of that content.

Extract 2: from 'In Love'.

1 C ((continuing)) putting his bow
 2 away (1.0) you've got these kind
 3 of over ripe apples on the table
 4 and falling to the ground
 5 B (ye the) apples
 6 A She's [spotted them too]
 7 C [and you've kind]of got
 8 some brown leaves as well
 9 B Yeah (.) sharp

Visitor A's response, "She's spotted them too", begins with an explicit third person orientation to the previous speaker as a person rather than 'presenter' (Heritage 2007) which reflects the commentators use of "you've got", linking the visitors with her own talk. Prior to this extract the visitors had discussed the apples in the painting, and line 6 references an informal activity ("spotted") applied by the visitor both to his own previous talk *and* that of the commentator ("too"). Thus the commentator is 'personally' made part of the mutual participation framework in which the visitors are currently engaged (namely, following the guide's identification of various features in the picture). This response from the visitors implicitly makes relevant the voice of the commentator in a way that she is *personally* accountable for her words.

A related example (Extract 3) appears earlier in the dialogue on the same painting, where the commentator's self reference (twice in a single turn saying, "looks to me") reinforces that she expects her words to be attributed to her *personally*. Visitor A's response accepts and builds on this framework by referencing her talk *as* personal.

Extract 3: from 'In Love'.

1 C Well I think descriptively we've

2 got erm we've got a lovely garden
 3 it's er looks like summertime to
 4 me (0.5) erm (0.5) a girl who to
 5 me looks er
 6 A Nowt gets past this lass

Such response has a 'knock on' effect as engagement with the guide continues, insofar as visitors may build up a sense of a commentator's 'approach' or 'character'. This can itself provide a resource for comment, as in Extract 4.

Extract 4: from 'Bistre 2'.

1 A He's disparaging of anyone who
 2 says anything about a painting
 3 isn't he
 4 B Yeah

In this case, the visitors go on to expand this sequence opening to discuss their *own* reactions to his view, but its origins remain in an assessment of the personality of one of the commentators, built up over the course of the guide speaking about more than one painting.

5.2.3 Engagement through a Shared Environment

In Extract 5, commentator D (lines 1-27) raises the question of how artists choose the size for a painting, and does so in a way which generates a shared participation context by referencing deictically the immediate physical environment within which both the commentators and the visitors experience the painting ("we've got some here which are huge", "another painting down there tiny just a few inches").

Extract 5: from 'The Imposition'.

1 D What's not often considered
 2 looking at paintings is what size
 3 they are cos we've got some here
 4 which are huge it's not the
 5 biggest one we've got but this is
 6 ye know five [foot square more or
 7 less]
 8 C [five foot isn't it
 9 yeah]
 10 B Mmmmm
 11 D Another painting down there (1.0)
 12 tiny just a few inches and what
 13 determines the decision to do that
 14 now it may be where they're going
 15 to hang it if it's a commission ye
 16 know we've got a damp patch about
 17 so big
 18 C Yeah

19 D can you help cover it hh[hh]
 20 C [hh]hh=
 21 =[hhhhhh]
 22 A [hhhhhh]
 23 B [hhhhhh]
 24 D But why is this absolutely so vast
 25 because it must limit (.) unless
 26 it's a commission it must limit
 27 what you can do with it
 28 B Mmmmmmm
 29 D it limits who you can sell it to
 30 B I think it needs to be that
 31 [big though]
 32 D [if it's up] for sale
 33 C yeh [I kept asking whether she=
 34 A [it wouldn't have the same=
 35 C =did small ones hhhhh]
 36 A =impact if it was] small it

In line 24 the commentator poses the question directly (almost in exasperation), "but why is this absolutely so vast". Visitor B (lines 28 and 30) and A (34 and 36) *do* offer answers, also drawing on the shared environment. In this sequence of dialogue the visitors incorporate the guide as first pair part in their own dialogue, providing a second pair part and sequence closing third (Schegloff 2007) – hence the 'dialogic' nature of the guide institutes, both in terms of content *and* structure, the talk between the visitors.

5.2.4 Engagement through Assessment (1)

Dialogue in guides has the potential to encourage visitor engagement with paintings which may not in themselves be immediately 'interesting', by having commentators bounce personal reactions to the work off one another (Extract 6 lines 1-16) and so implicitly encouraging visitors to do the same, either by having provided a starting point, or being suggestive that there *is* value in such talk. This we see in the visitors' responses in lines 19, 21/22, 24, 26 and 28/29.

Extract 6: from 'Violas'.

1 C ((turn continues)) and I think
 2 what I like about it is its
 3 simplicity which makes me feel I
 4 could live with it I suppose that
 5 in in my house I might always find
 6 something different in it it's
 7 quite strange
 8 (2.0)
 9 D Yes well for me it's one of those
 10 paintings that could slide into
 11 interior decoration (1.0) there's
 12 there's plenty in this gallery

13 which I like but I would not want
 14 to have every day on my living
 15 room wall
 16 C Yes
 17 D Not that my living room's big
 18 enough for [some of these but=
 19 B [It's a very modern=
 20 D =but that one certainly yes]
 21 B =() ye could see it fitting into]
 22 ye
 23 D it's very calm soft shades
 24 A Ye toilet
 25 D e:rm
 26 B Yeah
 27 D Very [very attractive]
 28 B [well considering] the art
 29 collection of my landlord

It appears that when guides successfully engage in this kind of activity, they are inspiring a particular *topicality* in the participation framework built around a shared experience of 'standing before a painting in a gallery and assessing it with a friend', and a situation where both visitors and commentators assume the same role and status.

5.2.5 Engagement through Assessment (2)

Related to the previous two sources of engagement, first where a *question* from the commentator projects an 'answer' from the visitors, and second where assessment talk in the commentary *stimulates* such talk in the visitors, is the situation of visitors responding by directly linking their assessment to one on the guide, as in Extract 7.

Extract 7: from 'The Imposition'.

1 C I::: er what I really like about
 2 it is the amount of different
 3 materials and texture that she
 4 uses in it as well as this really
 5 kind of dynamic sweep I guess and
 6 I really like black and white
 7 paintings I don't know if that
 8 says something about my character
 9 does it hhhh
 10 B Yes she's right it has got quite a
 11 kind of variety of textures in
 12 something seemingly quite simple

Visitor B, in response to factual detail (though couched in terms of an assessment ("What I really like about this is...")) makes an agreeing assessment (line 10) which aligns his position with that of the commentator, not merely in terms of rephrasing the informational content to agree with 'the assessment', but also explicitly agreeing with the commentator *as an individual* ("she's right"). The visitor responds

here to the *way* the information is presented as well as the informational content itself.

Orientation of visitor talk to the speakers on the guide as well as to one another is also evident in Extract 8.

Extract 8: from 'A View of Nottingham from the East'.

1 D Fantastic (0.5) love it
 2 B I do like it [as well] actually
 3 A [Mrrmmmmmm]

In response to D's assessment, visitor B shows the conventions of turn projection at line 2 not only by producing his own assessment but also by orienting it *back* to D's turn ("as well").

Prior to Extract 9 the commentator states that she likes the painting, but then explains why she thinks many people don't. She here employs considerable equivocation ("I think", "maybe") and casual language ("grubbier"), for a perception she does not herself share. The visitor's contrastive response assessment in line 7 ("I like") therefore serves to contradict these 'other visitors', agreeing with the commentator's earlier positive personal assessment.

Extract 9: from 'Violas'.

1 C I think one of the things people
 2 maybe don't like is the white
 3 frame which is e::r maybe a bit
 4 grubbier than it would have been
 5 done (0.5) would have been in in
 6 its heyday
 7 A I like the white frame
 8 B Yeah

5.2.6 Engagement through Laughter

A further example of engagement with dialogue guides is visitors responding with and to the shared laughter on the guide (Extract 10). Coates (2007) argues collaboratively-negotiated laughter signals appreciation and amusement, generates mutual solidarity (through the shared knowledge or experience needed to appreciate the humour on which it is based) and also marks the ending of particular frames of experience.

Extract 10: from 'Violas'.

1 D Hhh I don't trust experts
 2 C Don't you hhhh[hhh hhhhhh]
 3 D [No hhhhhhh]
 4 B [hhhhhhh]
 5 A [hhhhhhh]

So laughter becomes a signal of engagement not only with overt jokes, but with a participation

framework shared by visitors and commentators. See lines 19-23 from Extract 5 for a further instance.

5.2.7 Engagement through Revoicing

In Extract 11, visitor B's agreement (line 17) both reflects the content of the commentator's assessment (lines 1/2, 5, 7, 9, 11 and 14/15) and echoes her words ("quite tempting"). Such 'revoicing' (Tannen 1989) shows the natural, spoken language of SDG talk providing a *resource* for visitors to incorporate into their *own* talk, something far less available in the more formal, written English of a SMG text.

Extract 11: from 'The Imposition'.

1 C =[painting so I know it's
2 probably]
3 A =[this if you don't have an audio
4 guide]
5 C [really]
6 B [ye:ah]
7 C [quite tempting to try and to]uch
8 A [cos that's quite interesting]
9 C [this kind of touch]
10 B [there's the book]
11 C [This kind of textured ()]
12 A [No one's gonna look at the book]
13 B I know
14 C but then we have to try and stop
15 people touching aswell
16 (2.0)
17 B And (that's) right it was is er
18 quite tempting to go and

5.3 User Feedback

A semi-structured interview was conducted with the test visitors prior to analysis of the language data so linguistic findings would not interfere with the interview process. Nevertheless, many of the users' reflections correspond to the findings discussed above. Both participants had previous experience with SMGs and reported "enjoying" the SDG more; they recalled that in their experience SMG content rapidly became boring. "Stories" and "natural language" were expressed as particular positives of the SDG, and that the commentators "did not know everything", so the visitors did not feel obliged to accept their interpretation. They also reported that the guide "informed your understanding" and that they felt they and the commentators were "having the same kind of conversation". Certain 'coincidental' talk (not described above) was said to be particularly memorable, one example being when a visitor, looking at a painting stated "I could have painted that", which was moments later echoed by one of the commentators on the guide. Visitors also

liked when, "what the guide was saying and what we'd said came together or contradicted each other". They noted the humour, and when the guide enabled them to change or develop their own opinion. Both respondents offered the view that if they had used the guide on their own it would probably also have been more engaging and that they might have been "sucked into" the conversation on the guide.

6 DISCUSSION

6.1 Theoretical Explanation

The role of assessment as a key feature in encouraging engagement has been shown here to emerge as much from the dialogic form of the assessment as from the actual content. In talk-in-interaction, assessment is negotiated and acquires meaning across turns, and it is this which creates engagement. The response to assessment in audio guides can be further explored with reference to Pomerantz' (1984:62) "speaker's procedural rule" whereby the recipient of an assessment turn of talk has an orientation to respond to that assessment (see also Heritage and Raymond 2005). The conjecture, equivocation and qualification with which commentators interweave their assessments has both a 'micro' effect on listeners' reaction to a particular assertion and a 'macro' effect on their reaction to the overall authority of the guide; it 'demands' closer attention, increasing the likelihood of the listener's responding to what they hear *actively* rather than *passively*.

It is important that the engagement described is understood as responsive behaviour which can be generalised beyond this particular study. Goffman's work on 'footing' (Goffman 1974, 1981 and Levinson 1988) provides an explanatory framework for the nature of the spoken interactions described. For Goffman (1981:128), 'footing' constitutes "the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance". It is the negotiation of footing across the two conversations (the experts' and the visitors') that shows us the particular engagement visitors have with a spontaneous dialogue guide. Levinson (1988) describes how, footing is founded on deixis; the way language 'points', indexes and references, and through which we create and demonstrate our orientation to the people and context in which we find ourselves. It is through deixis (for example the way a visitor aligns themselves with a commentator's assessment, references a

commentator as “she” rather than “it”, or engages in laughter based on a shared referential understanding) that relevant, on-topic responses constitute engagement.

Goffman describes group talk as comprising a single addressed recipient but also ratified unaddressed recipients; those not ‘directly’ addressed but who have the possibility of becoming next speaker. Visitors listening to a guide cannot produce the next turn in that dialogue, but can and do speak a next turn to their co-visitor. In doing this however, they must draw on and re-relate the footing of the guide conversation in ways such as those described. This means the audio guide users do not adopt a typical audience role. Goffman (1974:540) suggests that in theatrical contexts words are spoken *for not to* an audience, “appreciation not action is their appropriate response”. This also applies to experiences such as viewing a TV talk show or listening to a lawyer/witness exchange as a juror. These contexts differ fundamentally from those where verbal response is being encouraged; where action not appreciation *is* the appropriate response.

It might be suggested that engagement as it is considered in this study will rely heavily on a personal chemistry between the commentators. This too would benefit from further investigation, and empathy and affiliation may play a role. However, it is argued here that it is *structural features of interaction* that are most significant. We have highlighted laughter for example as a function of discourse as well as a response to humour. Unless there is a positive dislike between the commentators, their engagement in talk-in-interaction should necessarily produce the structures, devices and organisation identified here as key to encouraging listener engagement. We therefore offer explanations for why and how visitors have engaged with a guide, supported by evidence from user feedback.

6.2 Issues of Wider Deployment

Spontaneous dialogue guides (SDGs) potentially offer a cheap, easy and flexible approach to providing effective audio guidance for visitors to museums, galleries, heritage centres, nature reserves and other contexts of informal learning. However it remains unclear how far one of their ‘strengths’ - drawing on the shared, physical experience of viewing an exhibit - might be changed if deployed beyond this space, for example on a website. This deserves further study as one particularly attractive application of SDGs is precisely this area.

A potential limitation lies in using SDG audio as a ‘minor partner’ in a multimedia context (Tellis 2004), or with technologies integrating the visiting experience with post visit web based interactions (Hsi 2002, 2003); i.e. where *audio* must be designed to accommodate the needs of the *other* media. SDG talk may be better exploited where the technology is assembled to support its strengths.

This might include the ability for users to stop and start the audio by voice actuation - the guide pausing upon detecting visitor talk. The value of this is supported by observations that users needed to *negotiate* pressing the pause button with their co-visitors, which proved disruptive to the listening. Such technology would also facilitate the sequential integration of visitor and guide talk since they both follow that inherent in incipient talk.

A further mundane, but potentially significant practical consideration is that the addition of assessment talk within SDG commentaries makes them relatively lengthy; in the CAGE project SMGs were considerably shorter than the SDGs produced here. It is likely that visitors will not wish to stand and listen for too long, so this should be an important consideration in designing the audio tracks. ‘Broadcastr’ (www.broadcastr.com), a mobile phone application designed to deliver user-generated location-based story-telling, deliberately limits the size (and hence length) of audio clips that can be uploaded onto its site – they consider 3 minutes to be the optimal length of time for someone to want to listen to an audio clip.

This small study has only been able to consider the guide from the perspective of adults within small visitor groups. Heath *et al.* (2002) discuss adult visitor interactions with *strangers* in museums, which change visitors’ relations with audio guides (and exhibits) for, as Benford (2008) stresses, this fundamentally alters the participation framework. McManus (1987) describes how families with children spend longer discussing exhibits but less time engaging with guides, while vom Lehn (2006) describes the importance for children of “bodily enactment” with exhibits (see also Blud 1990 and Hein 1998). Nor has this study considered student groups, which constitute a major field within museum guide research because of their blend of formal and informal learning (Tselios *et al.* 2008, Reynolds *et al.* 2009, Sung *et al.* 2010).

7 CONCLUSIONS AND FUTURE WORK

This project was designed to test the viability of creating museum audio guides using experts' spontaneously generated dialogue in context. It was hypothesised that creating audio this way would engage listeners with learning content through discourse features within it. The ways in which such engagement did occur have been surprisingly effective in increasing visitors' spoken interactions around the content of the guide, and their reported enjoyment of the experience. Further investigation beyond this initial study has much to show us, and a larger corpus of more varied visitors will provide further insights and increase our understanding of how such guides achieve or fail to achieve their goals. More varied learning contexts with different exhibit types and client demographics, such as natural history and science museums, zoos, botanical gardens, or school and college field trip locations must also be considered. It would also be informative to investigate the functioning of a spontaneous *monologue* guide, and to begin explication of how *commentators* are producing *their* talk, including more detail of the negotiation process and the way the audience is conceptualised and accounted for. With this data it may then become possible to manipulate and 'design' the production process more effectively and enable the content to be delivered in collaboration with other media, informing both the theory of talk-in-interaction and the practice of automated verbal information delivery.

ACKNOWLEDGEMENTS

Thanks to Nottingham City Council Museums and Art Galleries Service, volunteers in the user trial and Peter Lonsdale from the CAGE Project. Thanks also to Mike Sharples and Svenja Adolphs for their invaluable assistance and feedback. Brian Elliston is supported by the Horizon Doctoral Training Centre at the University of Nottingham (RCUK Grant No. EP/G037574/1).

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