

Engaging with the Access Grid as a new data collection tool

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This paper reports on research that explores the utility of Access Grid Nodes (AGNs) to conduct social scientific fieldwork. AGN mediated research has the potential to overcome the lack of co-presence associated with ‘virtual’ methods. This paper highlights the main findings of the pilot fieldwork (14 individual nonstandardised interviews with student respondents from three universities). Primarily, the experimental fieldwork aimed to collect AGN mediated data and secondly to reflect on this experience. A main element in our analysis of communication features is the concept of engagement. Engagement relates to being engaged with the topic and the interaction. Respondents reported that their concerns relating to the environment, cameras and the lack of physicality were reduced when engaged with the interview. Engagement however was disrupted by physical reminders of the AGN environment. In summary, respondents viewed the experience positively, highlighting that AGNs can be used for data collection. Whilst barriers to engagement need to be minimised, AG communication has the potential to enhance the researcher’s toolkit. It must be noted that arranging, conducting, recording and analysing AG sessions is not always analogous to face-to-face research. Instead AG research presents new challenges inherent in a new technology and a new research tool.

AGN-mediated fieldwork

The paper explores the utility of AGNs to conduct social scientific fieldwork. To the authors’ knowledge, using AGNs to collect data involving human respondents has not been tried before. Social scientists regularly collect data by ‘fieldwork’. To do this, they often have to travel to participants. Researchers with access to an AGN can stay put and the participants travel to an AGN local to them. This potentially offers a cost-efficient means of accessing dispersed, remote and hard-to-reach research populations. A particular application of AGN-mediated research may be to elite interviews, where AGNs would make it possible to involve more senior research participants and research users, offering elite members such as senior criminal justice officials and agents (e.g. judges) increased involvement in social research. The AGN mode would enable, for example, a US and British judge to participate in a real-time group discussion, when it would be unlikely that both could be convened at a common location. Our current research evaluates such a use of AGNs and documents procedures for this form of ‘virtual fieldwork’. Our work with the AGN aims to document and analyse the

interactional features of AGN-mediated communication, the function of fieldworkers, and the involvement of technicians. By assessing the value of AGN-mediated fieldwork, there is a potential to add a significant enhancement to the toolkit of social researchers. In addition the recommendations outlined in this paper may be useful for those wishing to enhance their AGN experience.

The research objective is to explore the use of AGNs, informed by the conventional co-present field methods, and relative to familiar online field methods. AGN mediated communication aims to resemble co-present communication by enabling users to convey interactional cues. Virtual methods have predominantly focused on text-based interaction. Such methods transverse temporal and spatial boundaries thereby overcoming financial constraints however, inherently the context prevents the communication of non-verbal and paralinguistic cues. Moreover, in comparison to co-present face-to-face methods text-based virtual research requires good computer and keyboard skills resulting in more effort on the part of the respondent. Introducing a visual aspect to virtual methods reduces these requirements. This may be particularly useful for time constrained elite respondents. Video teleconferencing and webcam use is often hampered by time delays and poor quality video and audio. AGNs can be thought of as an enhanced form of video teleconferencing, The idea is to make the communication as similar as possible to being in the same room as the remote participants, by delivering large format images (e.g., of the current speaker in a meeting) to the projection screen and provide high fidelity stereo sound. This increases the quality of the audio and video. Furthermore, there is no time latency making the interaction between remote participants immediate. In addition to facilitating interactional cues, AGNs have two further features which are beneficial to e-social scientists. Firstly, they enable participants to simultaneously view dynamic displays of high quality data images. In the research setting these can be used as response stimuli during interviewing/group discussions. Secondly, there is no theoretical limit to the number of sites that can be linked and this is particularly useful for group discussions and collaborative work. AGN mediated fieldwork offers the advantages of virtual fieldwork whilst more closely resembling co-present interaction.

Qualitative evaluation is well suited to exploratory research. The present research evaluates this by experimental fieldwork with a substantive focus on lay participants in the criminal trial process. This fieldwork explores the use of AGNs to conduct nonstandardised interviews and moderator-led group discussions. Interviews and group discussions were chosen for their widespread use in contemporary social research and their applicability both in quantitative and qualitative research. Utility is being assessed, and procedures documented, based on varying key design elements (e.g., number of participants, number of sites). The principal emphasis is on communicative features - facilitators and inhibitors in AGN-mediated field interaction. Relevant to such evaluation is analysis of the effects of technical hitches and the significance of visual cues noted in video-teleconferencing (Korschen, Pohl et al. 2002). We seek to offer procedural guidelines for others wishing to conduct AGN-mediated fieldwork and/or to refine procedures through their own experiments with AGNs as a research tool.

Pilot Interviews

This paper highlights the main findings of the pilot fieldwork. Fourteen individual interviews with student respondents from three universities were conducted. In the main stage of the research this will be extended to include group discussions. In addition, the sample population will be widened to include criminal justice professionals, notably criminal trial

judges in the UK and US. A student sample was actively sought for the pilot data collection due to convenience of recruitment. University students represent a large, potentially easy to access group. Moreover, the majority of AGNs are located within universities, making a student sample a strategic choice for pilot work. The majority of respondents were post-graduates studying a range of social sciences, and computing. Eight respondents were aged between 21 – 30 years, five between 31 - 40 and one between 51 - 60. There were six female and eight male respondents. Five respondents were international students, from India, Nigeria and Ireland. For three respondents their first language was not English. Half of the data collection was conducted AGN to AGN the other half was conducted AGN to Personal Interface to the Grid (PIG, this is a desktop or laptop computer which can be used to participate in AGN sessions).

The data collection had two aims, firstly, to use AGNs for the fieldwork and secondly to reflect on this experience. The research instrument, the interview guide reflects this. It takes a non-standardised format, with latitude for the interviewer to phrase questions and probes accordingly for each respondent. The first half of the interviews explored the respondent's views and experiences of the UK criminal justice system and the de-brief focused on the respondent's experience of the interview. The data collection was recorded utilising a conventional digital video recorder and where possible AG specific recording products, namely, AGVCR or Memetic's Arena. The data was then converted to a format compatible with a CAQDAS package. The recordings were analysed by segmenting extracts and compiling these into collections of related features.

Ethical considerations

All respondents were given an information pack which outlined information about the research, the research team, AGNs and the interviews. The pack also contained a respondent consent form for them to give their informed consent.

Ethical, copyright and IPR considerations are somewhat distinctive in work with an AGN. E-social scientists need to be aware that third parties - a technical operator at each AGN site - may be present, and that agreements need to be reached with bodies such as the AG Support Centre if meeting software is used that involves recordings residing elsewhere than the researcher's own institution. Regarding the former, we felt that it was critical that no third parties were present in the interviews. However, as node operators assisted with the set up of the sessions and recording of sessions, statements of confidentiality were obtained from all those who provided technical support. Regarding agreement with a remote site holding recordings, all but one of our pilot interviews were recorded and stored locally. The one interview stored remotely is password protected with access given to the researchers only.

We experienced difficulty in using the recording software and encrypting sessions. Users should be aware that using a non-encrypted virtual venue can lead to being interrupted by others or theoretically being overheard. However, such difficulties can be seen as analogous to using a physical room for face-to-face interviews, where being interrupted or overheard cannot be ruled out.

Technical considerations

While technical aspects of work with AGNs are not the focus of this article, a comment is needed about recording. There are a number of AGN recording software available. These

include inSORS software, AGVCR and Memetic's Arena. We explored the use of two latter products. Two issues were particularly relevant namely, whether the software has unicast as well as multicast functionality, and how the recordings are accessed and stored. We felt that it was important to store our recordings on our own server, we also needed to use a product that could operate in unicast mode (as our University currently only supports unicast networking to remote locations. AG-VCR has the potential to be used in both unicast and multicast mode and the recordings can be stored locally. We therefore attempted to use this to record our interviews wherever possible. However, we found that its use was not always possible we therefore recorded using a conventional digital handycam as well, we also used a digital audio recording device; AGVCR recordings were made when possible. The video data from both recording modes were exported into a format suitable for analysis using qualitative software and index was used to record all recordings and their formats. To explore features in more detail we plan to use TRANSANA ©. However, it must be noted that the reformatting of video recordings required further support from video editing software and was a time consuming process. The pilot data discussed here was initially analysed using code-and-retrieve in an Excel spreadsheet to segment extracts and compile these into the collections of related features that form the focus of the results discussed below.

Preparation

We feel that it is necessary to make other researchers aware of the logistics involved in organising AG mediated research. To this end we have provided a 'how to' guide on our website (www.accessgrid.surrey.ac.uk). This outlines the terms associated with AG communication and highlights particularly issues to be considered. One feature that we'd like to highlight here is the planning involved in organising AG fieldwork. Inherently, one needs to book all AGNs required for the data collection and liaise with remote node operators in regards to the confidentiality statement as well as the preferred set up for the session (for example, only displaying the main image of the researcher to more closely resemble face to face interaction). Discussions with the node operators are critical in finding out information about the remote node and in giving information to respondents. Both the lack of control of over the remote node and using an environment unfamiliar to the researcher are also methodological issues to be considered. Researchers should also be aware that extra time should be allowed for setting up of equipment for the session, the recording and testing the connection before the interview. In addition, arrangements need to be made with remote node operators in the event that there are severe technical problems during the interviews.

Engagement

Textual quotes are used to illustrate the elements of communication discussed in this paper. (Video clips will be used in the conference presentation.) These extracts are annotated with ID labels referring to the individual respondents. These were assigned numerically at the start of each interview, thus R01 was the first interview and so on. Additional information about individual respondents is given where needed to provide context whilst maintaining the anonymity of the respondent.

A main element in our analysis of communication features is the concept of engagement. This means being engaged in the communication and can be seen as a continuum from being fully engaged to being disengaged. Being engaged was typified by not being aware of the lack of co-presence. In contrast, disengagement can be described as being overly conscious of

the environment and the distance between the respondent and the researcher. The respondents found the environment and the presence of the cameras challenging. Despite such concerns, most found that they were able to form a positive relationship with the interviewer and felt at ease to discuss sensitive issues whilst at the same time feeling in control of the situation. One explanation for this is the concept of engagement. During the de-brief the respondents discussed being engaged with the researcher and the topic under discussion. When respondents felt engaged the lack of physicality was not a barrier to interaction. One respondent explained that once you were in the 'guts of the interview' (R07, male) being in different locations (and therefore contexts) was not an issue for him; the discussion thereby becomes analogous to that of a face to face interaction in the same room. This highlights the importance of engagement, engaging with the researcher and the interview. However, being engaged in the interview could easily be disrupted, therefore making the virtual nature of the communication apparent. The context, cameras, technical problems and disruptions all affected the respondent's level of engagement. The main barriers to engagement were the physical reminders of AGN communication namely the immediate environment, cameras, technical problems and other interruptions (such as a fire alarm at one of the research sites). When engaged respondents were highly animated. Being able to their own image and this movement in their peripheral view on the video wall was disruptive.

Engaging with each other

One of the problems inherent in virtual communication is the lack of shared experience and environments. The respondent – researcher relationship is considered important for successful data collection. The physical distance between the researcher and the respondent in virtual research can make this problematic. Despite such concerns the respondents and the researcher were able to establish rapport in most of the interviews. In addition, the lack of physicality facilitated a realignment of the power imbalance between the researcher and the respondent that is often associated with the research process. Respondents' reported feeling happy to engage with the researcher remotely and demonstrated their ease at doing so during the interview by discussing sensitive issues. Moreover, some respondents reported feeling in control of the interaction and the content of the discussion. The flexibility of non-standardised interviews facilitates this position by attending to the respondent's narrative and agenda. On the present evidence, the unfamiliarity of the AGN setting can increase respondents' apprehension and therefore impede the development and maintenance of an effective respondent/researcher relationship if strategies are not put in place to accommodate it, such as incorporating an exercise at the beginning of interviews or discussion groups to allow time for respondents to become familiar with the environment and AG communication. Even without such an exercise most respondents became at ease with the situation, so much so that some respondents consciously broke communication practices associated with face to face communication.

An indication that the AGN medium did not unduly obstruct the achievement of rapport is that respondents felt able to discuss their unwillingness to appear as a witness in court. One respondent shared his experience of witnessing a violent crime and his concern about being an eyewitness. This respondent was from India, and had witnessed an 'honour' murder. He was reluctant to go to the police, and explained that this was because he was concerned for his safety. At the time of the incident he was single and he elaborated that his concerns would be greater if he had a family. Fortunately in this case the perpetrator came forward and confessed his crime. However, the respondent's concern for his safety was so great that if this had not happened he still would not have come forward. Moreover, this particular

respondent's viewpoint goes against socially desirable responses in this country. However, this must be contextualised within a culture where 'honour' crimes are commonplace and where, as the respondent explained, citizens often know the identities of perpetrators. This example illustrates that despite interacting remotely with a stranger respondents felt able to discuss delicate issues.

Whilst there was evidence of rapport between the respondent and the researcher during the interviews the physical distance from the researcher enabled the respondents to communicate in ways that they felt would be less likely face to face. A number of respondents reported a sense of being in control of the interaction and in control of how much or how little they said. They also felt able to break some of the conventions of face to face communication. For example respondents often broke 'eye contact' and looked away from the researcher. This often occurred when respondents were thinking through their responses, and there was testimony that this allowed more time to reflect on responses. In addition to this, one respondent felt that she was able to make notes during the interview, to remind her of points she wished to raise in the de-brief, another respondent asked the researcher to take off her glasses to see whether this had an impact on making eye contact. These acts highlight that the respondents felt empowered to break the conventions of face to face communication whilst also demonstrating that they were actively engaged with the interview rather than passively responding to the researcher. Respondents attributed this to the lack of physicality, that instead of engaging with a person in the same location they were engaging with an image at the end of the interview room.

The following extract highlights how the lack of physicality can impact on interaction. The researcher asks the respondent to compare her AGN experience to that of face to face communication. The respondent explains that the removal of the physical presence facilitates interaction that is more relaxed than face to face communication. Whilst responding to the researcher's question she takes a pause and breaks eye contact by looking to her left. She uses this strategy throughout the interview. In the segment below she explains that interacting with an image enables her to break some of the conventions of face to face communication in the same location and that for her this allows her to think through her responses before verbalising them. This highlights, positive aspects of AGN mediated research. Moreover such lack of physicality can increase the respondent's control and power over the research interview and that interacting remotely can foster a comfortable and relaxed research setting, such that for some respondents this was preferable when meeting a 'stranger' such as a researcher for the first time.

Extract 1: Breaking the rules (R10, female)

"R10: Umm (pause)(looks to her left) Yeah well er I mean I suppose it doesn't feel like you're in Surrey, it does feel like you're just maybe at the top of the room like kind of (points to the end of the room where to the video wall). Err so like you are there. I think at the same time umm it's easier to kind of withdraw you know my eye gaze and that like you know if I'm thinking of a question I can kind of look away // MM: Yeah // R10: because you're just (laughs) // MM: Yes (laughs) // R10: a screen like you know (laughs) // MM: (laughs) // R10: (laughs) as opposed to normal conversation I'd have to keep up that eye contact // MM: Oh Okay // R04 And, And you know manage err manage the interaction a little more - yeah

....

R10: So when you're with somebody // MM: Yeah // R10: You do have other cues you know like touch or whatever that you can use as well. Umm but I do feel that I can kind of break the rules of conversation sometimes and just look off (looks to her left to)(laughs)// MM: Oh Ok (laughs) // R10: kind of (laughs) // MM: (laughs) // R10: Yeah. So umm // MM: That's interesting // R10: And it would be easier to do that, yeah // MM: Umm"

Whilst ensuring that respondents are not disempowered by the research process is critical, it is also important that the content of the interview be accurate. One respondent reported that because she felt in control of the interview and her contribution she also felt that she could be 'evasive'. This suggests that there needs to be a balance between not feeling pressurised to talk about things that are uncomfortable or too painful to discuss and responding in a way that might be misleading. Once again this was attributed to being in a different location to the researcher.

Disengagement

Engagement was only be maintained whilst awareness of the virtual nature of the interaction and the lack of shared context was minimised. Physical reminders of the distance between the researcher and respondents was an increased awareness of the environment, disruptions, the cameras, awareness of one's own image and technical problems.

The information pack given to respondents contained a brief explanation of AGNs along with a photograph of an AGN in use and the link to our website. This was felt necessary to give respondents an idea of what to expect when they came to the interview. Despite this, the environment was still an initial cause for concern for respondents. Only a small number of the respondents had experience with video conferencing and AGNs. Therefore most had no frame of reference for the AGN environment. This unfamiliarity was a primary concern and dominated initial impressions. The video wall, cameras, and other technical equipment give an AGN studio a technological appearance; one respondent highlighted that this could be intimidating and 'a bit star trek-ish' especially for respondents with no experience with computers and technology (R07, male). Cameras and video images are an integral part of the AGN experience. Being the subject of four AGN cameras (and in some instances a fifth video camera) was quite daunting for the respondents despite their confidence with computers and virtual communication. The respondents reported that concerns with the unfamiliarity of the environment decreased during levels of engagement. Conversely an awareness of the environment often led to temporary disengagement.

The technology and the cameras thus heightened the sense of a projected image of the self. As well as creating an additional layer of performance in the interview setting this may also have effects on self presentation and body image. One respondent highlighted the need to demonstrate his attentiveness at all times, such as looking at the researcher's video image even when in face to face interaction he felt it would be acceptable to look away. This presentation of a positive attentive respondent was evident in the relaxation of body language during the second half of the interview. In contrast, during the substantive section of the interviews respondents sat upright and for the most part directly facing the researcher's image on the video wall. In interview interaction such a transition when the formal business of an interview is completed is often marked by a change in demeanour and a period of more relaxed conversation before departure. Some of the respondents reported that they were conscious of their self image and being in this environment heightened such feelings. However, respondents felt that their responses would have been any different had the interview taken place face to face. Concerns of this nature are not unique to AG communication however, the limitation in other cues designed to give reassurance relative to co-present communication needs to be considered when designing AG fieldwork sessions. In addition, we recommend that where possible cameras should be made less prominent. Some respondents made this suggestion. One highlighted that this would be more important for

sample populations less familiar with computers and virtual communication.

When engaged in the interview the respondents reported that the physical distance became less important, this rendered the interaction similar to face to face communication. Some respondents reported that this was like talking to someone located at the video wall. Thus whilst engaged the context of the discussion became less important. Virtual communication, an interaction between remote participants can to some extent be considered a shared experience. However, due to the different locations, this shared experience exists only within the discussion itself. This shared experience is temporary and engagement can be easily disrupted as discussed above. In one of the interviews this became apparent when the interview was disrupted by a third party entering the researcher's room. Whilst resolving this situation the researcher could not be seen or heard by the respondent. The respondent was therefore unaware of what was happening off-camera. This incident highlighted for the respondent the lack of shared contexts and therefore experience. The disruption to the interview was quickly resolved and the respondent immediately continued with her response. However, during the de-brief at the end of the interview she explained that would prefer future interviews to be conducted in the same room. She cited her unfamiliarity with the setting and the lack of a shared context and the reasons for this view.

Extract 2: Shared context, shared experience: Discussion of interruption (R04, female)

“MM Why do you think umm being in the same room would be so much more preferable in the interview situation?

...R04 Umm (pause) I don't er, I mean don't know, I just, probably just because of familiarity really. And because we're sharing a space and therefore sharing a level of experience ie when you're in, when the door opens I, - we're both experiencing it // MM Umm // R04 And we both respond to it. And I'm not kind of left 'what's going on?' sort of thing, and it just, from that point of view.”

This extract highlights that interruptions and reminders of the remote interaction need to be minimised, for example ensuring that the interview is not unnecessarily interrupted. Moreover, it highlights that there needs to be a clear rationale for using any virtual method including AGN-mediated fieldwork and an appreciation that some respondents may only participate if offered face to face data collection options.

Overall most respondents felt that AGN communication was satisfactory and were not averse to participating in AGN-mediated fieldwork in the future. Respondents highlighted that the visual element afforded by the AGN made the communication closer to face to face interaction than other forms of virtual communication. However, despite the improvement in visual information in AG communication (in comparison to video conferencing and web camera interactions) there is still some lack of non-verbal and paralinguistic cues. Those discussed at interview were the lack of facial detail particularly around the eyes and mouth, and loss of turn-taking cues such as the intake of breath before speech. However, respondents classified AG communication as a 'middle ground' - closer to real-life interaction than telephone communication and video conferencing but still missing some of the information readily available in face to face interaction. However, as the technology develops such problems should be addressed.

Conclusion

The concept of engagement provides analytic purchase in understanding research participants' response to virtual fieldwork using an AGN. It highlights some of the communicative features distinctive of this medium and indicates that there is a somewhat mixed picture with respect to how AGN-mediated interviews compare to conventional interviews and those conducted via video teleconferencing. Positive elements of the mixed picture include, facilitating greater control of the interaction for the respondent, and, of course, the saving in researcher travel time. Negative elements of the picture include an extra level of self-consciousness that is perhaps inevitable when one is aware one is 'on camera' as well as being audio-recorded, and a series of technical glitches and consequent delays and interruptions. The technical matters are inevitable in a new research technology. A partial response to the self-consciousness issue would be to better conceal the cameras, however, this may not be feasible and will never entirely overcome the problem. Most fieldworkers currently record interviews by some means and there is much testimony that self-consciousness fades as sessions proceed. With smoother technical performance this may be the case with the AGN, too. The cameras are an integral part of AGN sessions therefore an understanding of how this impacts on communication is critical. In reference to the cameras and recording the interviews, we take a similar position to Speer and Hutchby (2003); that the recording devices as part of the interaction and what is interesting is how the respondents orient to being recorded and the role this plays in the social interaction. Such findings may also be of interest to those who wish to record AGN sessions for teaching purposes or collaborative meetings.

It should also be noted that a student sample is a sample particularly knowledgeable about research methodology and as regards the computing students, about technology as well. A set of respondents from the general public may not be so aware of some of the features our sample remarked upon, having little to compare it to other than interviews most people encounter, such as job interviews or medical consultations, both of which are somewhat nervewracking and to which the AGN interview may actually compare favourably.

This apart, the pilot fieldwork reported here produced, in respect of the substantive topic, the volume and richness one associates with qualitative data, and some apt and insightful comments on virtual fieldwork in the feedback discussion. This highlights that the medium shows promise as a potential new mode of the research interview, but that is sufficient in itself to demonstrate it's robustness to mediate qualitative data collection. The next part of the research aims to test the utility of AGN-mediated fieldwork by conducting discussion groups and exploring its potential to facilitate international research and elite respondents. We hope that this will provide further detail to the picture outlined here and provide a better understanding not only of AGN-mediated fieldwork but also AG mediated human-to-human interaction.

Recommendations to facilitate AGN-mediated fieldwork

Methodological

1. Have a clear rationale for conducting AGN-mediated fieldwork, make this clear to respondents.

2. Use statements of confidentiality for all node operators and those providing technical support
3. Consider the recording requirement of the data collection. Is unicast functionality needed? Where will the recordings be stored and will this be secure?
4. Ensure that you have other 'back up' modes for recording the interviews
5. Factor in time and equipment to reformat all recordings if using a CAQDAS package
6. Use an index to log all recordings and their format
7. Allow time to set up and test the AGNs.
8. Arrangements should be made with the remote node operator in the event of severe technical problems

Engagement

1. Where possible cameras should be made less prominent.
2. Incorporate strategies to allow respondents to become familiar with the AGN environment.
3. Make arrangement for the session not be interrupted by third parties unnecessarily
4. Consider whether it necessary for the respondent to be able to see their own image

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