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Provocative Idea:

Online Interaction and "Real Information Flow": Contrasts Between Talking About Interdisciplinarity and Achieving Interdisciplinary Collaboration

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Abstract

In this article we study how members of an interdisciplinary research team use an online forum for communicating about their research project. We use the concepts of "community of practice" and "connectivity" to consider the online interaction within a wider question of how people from different academic traditions "do" interdisciplinarity. The online forum for this Grey and Pleasant Land project did not take off as hoped, even after a series of interventions and amendments, and we consider what the barriers were and how they might be overcome. Barriers to involvement included participants' expectations of interaction and collaboration—expectation that real interaction happens elsewhere, tensions between academic discourse and forum talk norms, unfamiliarity with the technology, and different conceptions of appropriate academic discussion. We suggest that common academic practice does not prepare us well for creating interdisciplinary research communities through online collaboration tools, whereas such tools are our best bet currently for including geographically dispersed members in collaborative projects. Therefore, careful planning and competence building would be necessary if such tools are to be used in collaborative research. Suggested interventions, based on our experience, include providing a more focused forum, making technical

support easily available, and setting up particular tasks or items to debate, within a preset, synchronous timeframe, focusing on issues relevant to the project at that time.

1. Introduction

In this article we describe a challenge faced by members of an interdisciplinary research team using an online discussion forum. We consider what sort of online collaboration worked for this group of academics, what failed, and how this could be improved. Online forums are becoming common as a way of interacting both socially and professionally, but it is not always clear how research teams can utilise the possibilities of online forums for interdisciplinary research collaboration. This article is based on a UK Research Councils (RCUK) funded study, Grey and Pleasant Land? An Interdisciplinary Exploration of the Connectivity of Older People in Rural Civic Society. This was part of the New Dynamics of Aging (NDA) programme, a major RCUK initiative developed to advance interdisciplinarity in aging research. The three-year Grey and Pleasant Land (GaPL) project, starting in 2009, constituted a 25-member research team from disciplines covering social sciences, geography, gerontology, transport studies, visual arts, museum studies, and informatics. The team was comprised of scientists and practitioners ranging from PhD students and early-career researchers to senior investigators.

The GaPL project had seven "workpackages" (i.e., linked sub-studies investigating various aspects of older people's inclusion in community life in rural areas). The work described in this article is based on Workpackage Seven: Managing Interdisciplinary Research Connectivity. Some of the research team had worked together previously on a preparatory project to build the interdisciplinary team (Hennessy & NDA Preparatory Network, 2008) but many newly recruited members met for the first time on this project. Within the workpackages, small groups of researchers collaborated closely; the overall GaPL team met face-to-face or via videoconference on a quarterly basis with additional meetings convened around particular tasks.

One of the project aims, in Workpackage Seven, was "to build capacity for robust interdisciplinary research through participating in a collaborative research process that incorporates reflective practice and technologies to document that practice." The researchers' forum on the project website was intended to be the main space for the collaborative activity to occur among researchers from a wide geographical area (various

parts of southwest England, Wales, and Canada), with the aim of developing ideas and outputs (research articles and books) together.

Our choice of an online forum reflected current practice in other large-scale multidisciplinary research projects with team members in multiple locations (see e.g., Orford, Fry, Berry, & Higgs, 2012) as a site for data and other resource sharing as well as a convenient and accessible asynchronous method to enable team exchanges. In addition, because we planned to capture the process of "doing interdisciplinarity" across the life of the project, the forum met our need for collecting qualitative data on team members' interactions and contributions across disciplines.

We consider the concept of interdisciplinarity elsewhere (Hennessy, Means, & Burholt, in press). The team's approach to interdisciplinarity had been established in the preparatory project phase based on a review of best practice in interdisciplinary team development and processes, and discussions on how to embed features to promote this approach within the project. Interdisciplinary working was addressed in all team meetings and resources on the topic of interdisciplinarity were available in a designated section of the online forum.

In this article we explore the contrast between the aim of the online researcher forum for achieving interdisciplinary *connectivity*, and the experience of the forum. Our analysis draws on several related concepts—connectivity, community of practice, and collaborative learning.

The concept of connectivity was crucial to the GaPL project—a study of connectivity of older people in rural areas, but also the notion of research connectivity across disciplines. Connectivity has been employed as a cross-cutting interdisciplinary concept in this work and was originally defined in the project proposal as a *heuristic metaphor* (Bracken & Oughton, 2006), allowing for the systematic development of collective theorising around this shared notion. As Hennessy and Walker (2011) highlight, although there is an increasing drive towards multi- and interdisciplinary research in the field of aging, many important barriers to collaboration persist. Among these are ideological differences in approaches to knowledge, varying disciplinary conventions regarding publication—not just authorship, but also the relative importance of journal articles, books, and other outcomes, and other differences in disciplinary cultures, including language (Baker, 2006), models, and metaphors (Dalke, Grobstein, & McCormack, 2006). Physical distance and time have also been identified as key obstacles in collaborative research projects like GaPL (Larson, 2003). The online forum was intended as a means for reducing these barriers as well as a vehicle for observing disciplinary connectivity over time.

The Web was initially designed to be a space within which people could work on an expression of shared knowledge (Berners-Lee, 1996). Lave and Wenger (1991) coined the term *community of practice* as part of a wider concept of situated, co-constructed learning. A community of practice involves a group of active practitioners in the same field, with membership dependent on expertise, sharing an interest for "something that

they know how to do, and who interact regularly in order to learn how to do it better" (Wenger, 2004, p. 2). Some studies have considered the processes and difficulties of sense-making or collaborative learning across traditional boundaries, for example Gray (2004) argued that shared learning and interest are what keeps communities of practice together. Gasson (2005) studied a group of people from different professions jointly working together across knowledge boundaries, and noted a constant tension between viewing the online activity as "pooling existing knowledge," or as a "process of collective learning." Wenger (1998) outlined four main characteristics that distinguish learning in a community of practice: (a) learning takes place in practice, (b) learning occurs as being a member of a community (membership implies a minimum level of knowledge of that domain—a shared competence), (c) learning is a part of experience and, as a result, becomes meaningful, and (d) identity is developed through practice and meaningful learning in a community. Wenger, McDermott, and Snyder (2002) subsequently identified four factors that challenge the creation of a distributed community of practice: distance, size, organizational affiliation, and differences. Baker-Eveleth, Sarker, and Eveleth (2005) considered ways of overcoming Wenger's challenges, recommending that synchronous talk could overcome physical distance limitations, and that the technology should support synchronous and asynchronous ways of interacting, with choice for participants regarding which they use:

> Providing the space is only the first step in creating a community of practice. Employees need to be encouraged to interact, share knowledge, and develop their own structure in an online environment to make it their own community of practice. (Baker-Eveleth, Sarker, & Eveleth, 2005, p. 9, concluding paragraph)

Hara and Hew (2006), in their study of a nurses' listserv, identified six success factors for a learning community of practice: (a) self selection, (b) need to validate one's practice, (c) need to keep up with knowledge and best practice, (d) non-competitive environment, (e) asynchronous medium, and (f) moderator role.

2. Data and Analysis

The data we use here come from the private research team forum, set up in 2009 at the start of the project, and continuing over the three year duration of the project. Only team members could read or post on this forum. The forum existed in tandem with a forum for the project participants (i.e., older adults living in rural areas, and people with an interest in this, see Jones, Smithson, and Hennessy [2012] for details of that forum).

In this article we focus on how members of the multidisciplinary research team communicated on the project forum, drawing on the concepts of community of practice, collaborative learning, and social writing. We intended to use *discourse analysis* to understand how participants on a support forum use the forum. The body of research adopting either discourse analysis or *conversation analysis* approaches to online data is increasing rapidly (e.g., Lamerichs & Te Molder, 2003; Vayreda & Antaki, 2009). For example, Stommel and Koole (2010) studied an online support group for people with

eating disorders, viewing this as a community of practice. We intended our analysis to focus on the ways researchers interacted and collectively constructed knowledge in this context, without extrapolating to the people behind this. From a discourse analysis angle, forum interaction can be understood as a type of everyday interaction, although it could be conceptualised differently by the participants (it has been in our case, as we will see). Our analysis considers both threads on connectivity from the forum and the intervention to stimulate connectivity on the forum. The authors of this article were involved in setting up the forum and in some of the attempts to encourage discussion, as noted in the analysis. Two of the authors were involved in leading the overall project; another author was involved mainly in studying the online forum activity both for the older people's forum, and the researchers' forum. Another member of the research team, not one of the authors, moderated the two forums.

2.1. Analysis of Threads on Connectivity

The project team struggled with forum interaction from the start. Very few posts were initiated, posts were often not responded to, and team members avoided efforts by the research team to increase participation.

2.1.1. Discussing Methodological Connectivity

Extract 1 comes from a thread starting with a question about methodological connectivity. This thread elicited exchanges among team members from several disciplines (psychology, transport studies, informatics, gerontology, and the visual arts) on issues relevant to progressing interdisciplinary connectivity (e.g., defining and positioning the role of the arts in the project contrasted with "data-driven" disciplines). There were six posts in total over two months, including one by the moderator (disguised below as "Mod").

Extract 1. Discussion Forum: Methodological Connectivity

1. **Discussion Forum: Methodological Connectivity**
2. **Tina* 7 Oct 2010** (a long post about the findings in their workpackage, ending with):
3. So, in opening these considerations we are proposing that the issue of methodological
4. connectivity is one area that can be debated and developed by other workpackages as well.
5. **Shaun 15 Oct 2010:** I think Tina raises excellent points in her post. It's real (life) world
6. research we are doing here, so it is quite appropriate to have differing methods for
7. collecting information/knowledge/data on the same subject. This does raise challenges, not
8. least in the epistemology- is it possible to have different views on how knowledge is known
9. and how we view the world and then for the findings to appear side by side or is it
10. better they appear separate? The challenge to me is how we re-present knowledge on
11. mobility and movement when we are using static or quasi-mobile methodology frameworks
12. and tools. Is it possible to capture the true essence of being physically mobile through static
13. discussions on the subject? Or is temporal movement enough? How can we make the
14. methodology fit the purpose better? Does phenomenology do this through movement into
15. depth? Does mobility biography does this through movement through history?
16. **Mod 19 Oct 2010:** Shaun, all sounds interesting but I am struggling a bit. I don't
17. quite get what you mean by 'static or quasi-mobile methodology frameworks'. Can you give

18. me an example of that—and of what a mobile methodology would look like/be. And by
19. temporal movement do you mean that you/we are studying things over time? I guess I had
20. not considered to be mobile to be pass from time point a to time point b, but always
21. considered it spatially. Of course, if we video conference or even email or telephone we are
22. connecting over space and that was the interesting idea (I think) that you were exploring in
23. looking at mobility.
24. I thought—like all good students—I would go to Wikipedia to see what I could crib from
25. there on mobility. This is what it says. A real hotch potch (as often the case). Do YOU all
26. have a definition of mobility, bw Mod
27. (LINK to several definitions of mobility).
28. **Shaun 22 Oct 2010:** Mobility is simply defined here as movement—it is sometimes correlated
29. and related to accessibility (getting to a place) but this is not always the case. In my
30. previous post, I suppose I simply mean, what do we lose by capturing the essence of
31. physical movement (movement through space and place) through relatively static
32. methodologies like interviews, that at best temporally move participants (through time—
33. like phenomenological interviews). Do we need to physically be moving with the
34. participants? This doesn't always happen, though travel ethnography suggests it is important
35. (e.g. Urry, 1007; Watts and Urry, 2008; Watts, 2008). What happens in other domains—is it
36. important to capture the nature of computer use, using computers to collect the data—
37. sounds sensible!?
38. (3 academic articles referenced)

* *Note*. Names of participants changed, apart from the names of the current authors.

Extract 2. Discussion Forum: Methodological Connectivity (further down the same thread)

1. **Don 9 Nov 2010:** I suppose the next question for me is about whether methodological
2. connectivity requires a kind of 'coherence' in the way that it hangs together, or whether a
3. 'patchwork' approach is enough. There is a continuum here that perhaps involves aesthetic and
4. ethical criteria about caring for multiple audiences and the question of 'what the knowledge is
5. for.' So, in considering methodological connectivity, I think that it may be helpful to have an
6. explicit discussion about two things: our multiple potential audiences, and the kinds of
7. knowledge that we are producing.
8. (links to two articles Don co-authored).

We can see here that the style—length of post, complexity of sentences—is in contrast to more standard forum talk (Crystal, 2008; Smithson, Jones, & Ashurst, 2012). It is notably didactic, drawing on academic discourses, making an argument while defining concepts and linking to or citing relevant references. These initial posts by Shaun perhaps "set the bar" high with well-developed ideas expressed in academic language that may have created some reluctance to "dive in" with less formal or insufficiently thought-out contributions. Tina posted in this style, and several days later Shaun responded. Four days later the moderator, Mod, joined in, using the strategy of asking for expansion on a term. This elicited a response three days later from Shaun. The thread continued with three further posts, by three further members of the project, over the next two months—a long timeframe for an Internet thread. Neither Tina nor Shaun posted again on this thread. The style and progression of this thread are typical for the GaPL forums. Extract 3 shows a thread with one post from the moderator about the concept of connectivity:

Extract 3. Discussion Forum: Connectivity Between Workpackages

1. **Discussion Forum: Connectivity between workpackages**
2. **Mod 29 Jan 2010:** In this strand perhaps we can start to compare the meaning of
3. connectivity for you and your workpackage, and describe how you see your workpackage
4. connecting with other workpackages and the project?

As with the discussion in Extract 1, the title and the content of the original post were directly relevant to the project's core aims, and relate to discussing the concepts of connectivity within and across the workpackages. However, an open-ended question, with clear guidelines for possible responses, got no replies (in the following 16 months).

2.1.2. "Doing" Methodological Connectivity

Extracts from the threads above were explicit attempts to discuss what methodological connectivity might be. Other threads were attempts to discuss the practicalities of doing this. Extract 4 is from a thread from around the same stage of the project. People had commented in a face-to-face meeting in October 2010 that they would feel happier if they already felt they "knew" other posters. This led to the following thread:

Extract 4. Discussion Forum: What Shall We Do With the Day and a Half in Plymouth?

1. **Discussion forum: what shall we do with the day and a half in Plymouth?**
2. **Mod 4 Oct 2010:** I would propose that for one of the sessions we go to a
3. computer lab and have a discussion using this discussion forum so that people get used to
4. the idea, and so that the discussion is automatically documented.
5. **Henry 5 Oct 2010:** That's a good idea Mod. I also think we should spend some time mapping
6. the overall project in terms of emerging themes (keywords?), methods, theoretical
7. underpinnings and proposed publications. If we make this a visual process it should help us
8. to explore the connectivities between the work packages and identify any gaps.
9. **Sally 5 Oct 2010:** I think we need to spend time informally getting to know each other—it
10. would be enjoyable but would also increase our willingness to communicate with each
11. other and therefore benefit the discussion forum. I like the idea of time spent in a computer
12. lab so we become more at ease with posting.
13. **Nicholas 13 Oct 2010:** Hi all am keen that we work hard on our overall dissemination strategy
14. how that relates to key concepts. it seems to me we need to deliver on at least three
15. major shared endeavours:
16. i) A special issue in a rural studies journal—John already has this in hand even though it
17. won't be 100 per cent from this project
18. ii) A special issue for X journal—we need to agree who should edit this and how it
19. should be put together
20. iii) A book—again we need to agree editors and content (and how it differs from the special
21. issues) although the publisher is likely to be decided by ESRC/the New Dynamics
22. Programme Director . . .
23. What do others think?
24. Nicholas.
25. **Shaun 15 Oct 2010:** Since it is just after Christmas we need to think about a themed event—
26. can we have ghost of grey and pleasant land past, now and future?
27. **(1) Grey and Pleasant Land Past:**

28. I think we should learn about each other's workpackage findings—I still don't feel I know
29. what has been going on in them all. . . .
30. Maybe we could do speed dating style event where each workpackage member gets to talk
31. to every other workpackage member—3 minutes of key findings each, followed by 4
32. minutes of discussion before moving on. Key elements of each discussion could be brought
33. together at the end.
34. Maybe everyone could design a poster at the event itself using pens, paper, cut out from
35. magazines, to illustrate their key findings and present them at the end?
36. **(2) Grey and Pleasant Land Now:**
37. Building on Mod's computer session idea—What are the implications for what we have found
38. in real life? perhaps we could discuss how our findings fit into the real world with his team
39. of older people on a live chat room event?
40. **(3) Grey and Pleasant Land Future:**
41. I agree with Nicholas in that we need to think about dissemination but add (iv) other
42. audiences and dissemination events. . . .
43. And there must be a good dinner with wine as this will actually be where real information
44. flow will happen.
45. **Mod 19 Oct 2010:** yes . . . I'd vote for the speed dating. I have seen that work well in other
46. meetings/conferences. Mod.

2.1.3. Conceptions of Interaction and Real Information Flow

Mod's opening post, inviting discussion, elicited a thread by Henry using the academic discourse already noted in previous threads. The next poster, Sally (Extract 4, lines 9-12) posted in a different style, talking about "time informally to get to know each other" addressing some of the reasons people may not have been posting. This was followed by Nicholas who returned to the academic register, talking about "dissemination strategies" and producing a three-part list of possible publications (lines 16-22), followed by an invitation to respond: "What do others think?" (line 23). Shaun followed with a mixture of responding both to Nicholas's academic list-making, and Sally's orientation to how people might feel more comfortable about posting on the threads. Shaun's three-part list is in contrast to Nicholas's list of dissemination outputs, being a list of practical ways to discuss connectivity: speed dating style (line 30) and poster making (line 34). Shaun then oriented directly to a part of Nicholas's post: "I agree with Nicholas" (line 41), adding a "but . . ." Of particular note is Shaun's concluding sentence: "And there must be a good dinner with wine as this will actually be where real information flow will happen." Although Shaun, in his post, had responded to both Sally's practical concerns and Nicholas's academic list, shifting between a more casual and a more academic discourse in his posting style, his conclusion was that "real information flow" happens elsewhere. Real information and flow are contrasted with online forum talk. The distinction between the "real" world and online forums was also present in Shaun's use of the word *real* as a contrast to online findings twice in line 38.

Extract 5. Discussion Forum: What Shall We Do With the Day and a Half in Plymouth? (a few lines on in the same thread)

1. **Sue 29 Oct 2010:** Is there a feeling that the main barrier to participation in the online forum
2. has been technical confidence? Should we see how the forum goes for a while longer—we

3. may not need that session. I think it would be a real shame not to use the time in Plymouth
4. for face to face conversation while we have the opportunity, and agree that this in itself
5. should encourage participation in online conversation."

Sue questioned whether technical confidence with navigating the forum is a barrier, "the main barrier." She then suggested that it would be a "real shame" to spend the time at the next project meeting in working on this via a "speed date," rather than having "face to face conversation". Lack of technical confidence was regularly referred to by the participants, but here Sue's description of using the Plymouth meeting time for online interaction as a "real shame" hinted at it being a dispreferred form of interaction, a waste if there is a chance for "face to face" conversation. Again, the inference is that "real information flow" takes place in a particular way—namely, offline.

One of the researchers commented on the distinctively academic style of posting on this forum during a thread on the "Managing interdisciplinary research connectivity" board. Janet here is one of the current authors, already involved in considering how the forum facilitates, or not, interdisciplinarity:

Extract 6. WP7: Materials from Catherine on Multi- and Interdisciplinary Working

1. **WP7: Materials from Catherine on multi and inter disciplinary working**
2. **Janet 2 Nov 2010:** One thing I do note as quite different on this forum from many other
3. forums is that it's quite formal on here, people tend to post academic summaries, whereas
4. on other sites the posts will generally be shorter, more interaction, more bouncing to and fro
5. of ideas. But that may change.
6. **Tina 9 Nov 2010:** I like the blogs to be quite academically focused and also not too informal
7. as I am new to this way of working virtually and would like to see and have an aspiration
8. that our academic focus and level of engagement and discussion will develop and crystallise
9. as we all begin to feel more safe working this way. This is quite a difficult way of working,
10. more complex than being in the room together.
11. **Janet 23 Dec 2010:** Thanks Tina.

Tina's post here was in line with the analysis of the earlier threads. Members of the research team came to the project with specific understandings of how collaborative working should or would occur—a preference for being "academically focused," "not too informal" (Extract 6, line 6). The contrast between online talk (informal) and academic talk (focused) are explicit here. The traditional academic goal of "writing solo" (Gallagher, 2009) has the aim of proving a point to others, in contrast to a discussion board format with the goal of "writing socially"—exploring a topic with others and deferring closure as long as possible. Tina also talked about hoping to start to feel "more safe working this way," finding it "difficult," "complex." The perception of risk in posting online is common, but here (on a closed forum) Tina may be referring to the risk of exposing one's exploratory views in the environment of an academic discussion in which contributions (especially by some senior members of the team) tended towards formality in content and tone.

2.2. Interventions to Stimulate Debate on the Forum

Over the first year of the project, research team members rarely posted on the forum, and many posts went unanswered (as in Extract 3). The research team tried a series of interventions to encourage online collaboration and debate on the researchers' forum. The site moderator set up discussion points (Extract 3), regularly responded to posts (Extract 1, line 16), posted questions to open up discussions, but, as Extract 3 demonstrates— often Mod's posts and threads remained unanswered. The moderator and project leader stated the benefit of the forum in project meetings, and also sent reminders by email, exhorting the project team members to contribute actively. Team members were reminded of their duty, as project members, to join in the attempt to create online connectivity on the forum. The discussions in the first year or so of the project (and the forums), online and offline, focused on the obstacles to posting or feeling uncomfortable with this duty or expectation of posting. There was little indication that project members found the discussion forum a useful space. Rather it was discussed in team meetings as a challenge to be negotiated, a necessary task to be completed.

The moderator set up an activity to develop familiarisation with forum technology and interaction: a "Research connections online party," occurring during the face-to-face project meeting (January 2011) to familiarise team members with the mode of posting and responding. The moderator posted various starting threads, and then the other posts were all on the same afternoon.

Extract 7. Research Connections Online Party: The Attic

1. **Mod:** Well don't just stand there! Get yourself a
2. drink and something to eat and introduce yourself to the others in here. Say a bit about the
3. research you do, not just G&PL, but all the other stuff. Maybe someone here might want to
4. collaborate with you on another research project. Now's your chance to find out….just
5. REPLY to keep this conversation in the kitchen going. Of course if you want to, you can
6. wander off to one of the other rooms or even multitask (the wonder of online parties is that
7. you can be in two places at the same time)- but don't spread yourself around the party too
8. much—pay attention to what others have to say . . . (lines omitted)
9. **Nicholas 3.36 pm:** I would have never found my way in here without assistance at every
10. stage. I can't even find which forum is which without help. There needs to be lots more
11. guidance as to how to navigate the site. I couldn't even find the joining instructions without
12. four emails to Mod. I'm quite prepared to accept that I'm just a complete Luddite. . . . (lines omitted)
13. **Richard 3.43 pm:** As a slow learner I have only just read the instructions about which room
14. I was meant to go to and hence I am now in the attic.
15. **Nicholas 3.43 pm:** No point in replying to Richard, then, he's left! Or has he just arrived?
16. **Garth 3.47 pm:** Perhaps a bit controversial, but how far should collaborative research projects
17. be interdisciplinary rather than multidisciplinary? Is it always a good thing to synthesise
18. processes during the development and conduct of research? An alternative is to conduct
19. multidisciplinary strands with comparative/contrasting analysis of the separate disciplines at
20. the end. Is GaPL multi or interdisciplinary?
21. **Janet 3.51 pm:** Garth I should be linking you to the discussion that was started on that a while
22. back, it's under Discussion and Debates I think Multi-disc v inter-disc.
23. **Nicholas:** I think we might be be too hung up about disciplinarity altogether. Can't we make

24. a contribution in pragmatic ways? Non-disciplinarity also has a role.
25. **Mod 3.53 pm:** Garth, good question. I think it was meant to inter rather than multi. As per
26. Clare's presentation a while ago, but multi is certainly much easier. We stick to what we
27. know about!
28. **Shaun 3.53 pm:** Most of the WPS have people from several disciplines within them, so to that
29. extent we are being inter-disciplinary by default. the challenge seems to be extending that
30. across the whole project.
31. **Nicholas 3.53 pm:** I did something on this in discussions and debates in September 10 but I
32. found it hard to find the responses.
33. **Nicholas 3.54 pm:** Why does the whole project have to be multidisciplinary, Shaun, as opposed
34. to having multidisciplinarity within it?

There is debate about concepts of being multi- and interdisciplinary—a discussion topic on which people had started threads previously (Extract 6). In Extract 7, people refer to unfamiliarity with the technology and difficulties of negotiating the site (over a year into the project and the forums). Nicholas (who, as can be seen from earlier extracts, is one of the research team members who has posted on earlier threads) described needing "assistance at every stage" (Extract 7, lines 9-10) and the need for "lots more guidance as to how to navigate the site" (lines 10-11), concluding that he is a "complete Luddite." Richard, similarly said, "As a slow learner I have only just read the instructions" (line 13). The self-references as a Luddite or a slow learner are interesting in an academic context where it is acceptable to be slow at grasping new technologies, in contrast to being slow to grasp academic concepts such as inter- versus multidisciplinarity.

While team members posted willingly during this lab-based exercise, this did not result in a subsequent increase in use of the asynchronous discussion forum. Although the researchers' forum did not take off, some of the research team members participated enthusiastically on the older people's forum, and particularly during a series of "fixed time" synchronous webcasts—hour-long activities towards the end of the project, with a focused discussion following a video summary of research findings. These webcasts were open events for the older people's forum (which was a separate part of the GaPL project), where the research team fared better at discussing research findings with the stakeholders (Jones, Smithson, & Hennessy, 2012), than with each other exclusively on the researchers' forum.

3. Discussion

Analysis of these extracts provides several explanations for why this research group did not utilise the online forum as anticipated. The key barriers to forum involvement and possible ways of harnessing the member's expectations and inclinations are discussed below.

3.1. Barriers to Involvement

The key barriers to involvement included: (a) unfamiliarity with online forums, (b) beliefs about the nature of information flow, (c) expectations about writing style, and (d) lack of emotional engagement.

3.1.1. Unfamiliarity With Online Forums

Although these academics were adept at using some devices and services of information and communication technology, this study highlights the distinction between established technology (telephone, email) and the newer formats. Most members of this group were not already enthusiastic about, or experienced with, interacting on online forums, and did not find it an easy way to work collaboratively.

3.1.2. Beliefs About the Nature of Information Flow

There was a pervasive expectation that real interaction happens elsewhere, face-to-face, and that it was essential to have a face-to-face relationship, "feeling at ease," before you could usefully interact online. In a previous study by one of the authors, researchers also stressed the need to get to know new collaborative colleagues in this personal way before Web-based communication could be made to work (Eales, Means, & Keating, 2012).

3.1.3. Expectations About Writing Style

This analysis has highlighted the recurring expectation that academic collaboration should be "not too informal," and this was contrasted with understandings of how online discussion takes place, especially for the older team members. The possibilities of social writing in an academic context did not engage this group of academics. A search for existing discussion forums for academics (January 2011) yielded mostly subject specific, often international forums, with optional membership. So, a linguistics forum might have several hundred linguistics academics and postgraduate students, self-selected researchers signing up voluntarily. The search for academic forums led us to many academic blogs. Perhaps many academics prefer to blog—their own authorship, in their own space, rather than engage in collaborative discussion. Concerns about ownership of ideas and intellectual work may be a deterrent, the academic system encourages individual production of ideas (Sherren, Klovdahl, Robin, Butler, & Dovers, 2009). A search for literature on online learning resulted mostly in articles by academics about forums for students, and descriptions of encouraging "constructive" student discussion. The activity of sharing and constructing knowledge collaboratively is encouraged in the learning context, but academics may view themselves as knowledge generators, not sharers or learners.

3.1.4. Lack of Emotional Engagement

Earlier Heckler and Russell (2008) have stressed the importance of emotional engagement for effective collaboration. Large multi-workpackage projects like GaPL are always likely to find it hard to achieve high levels of emotional engagement, especially initially. With GaPL this was particularly challenging because some of the senior investigators joined the project planning much later than others, creating a situation where some felt able to express scepticism as to whether online communities of practice as opposed to face-to-face team meetings were the most effective mechanism to foster

interdisciplinary learning. Attitudes changed over the life of GaPL but it did ensure initial progress was slow.

Together, these barriers led to a lack of momentum, with few successful "discussion catalysts" or "amplifiers" (Himelboim, Gleave, & Smith, 2009). Once the lack of enthusiasm became established, the attempts to encourage participation seemed forced and unnatural (Hennessy & Walker, 2011). There was a sense of duty about joining the forum and posting, in contrast to Hara and Hew's (2006) argument that self-selection is a key aspect of successful communities of practice. Although the GaPL research team did come together with mutual engagement to study rural aging and connectivity, therefore fitting many of the criteria for a potential community of practice, the team's expectation that real collaboration happens in other ways was a hindrance to developing effective ways of collaborating online.

3.2. What Might Work?

We have illustrated some of the expectations and preferences this user group brought to online collaboration. How might these be utilised for a future online forum?

3.2.1. Adopting Synchronous Design: Forums With Set Timeframes

In research projects with young adults, "the Facebook generation," there is often much posting and reposting, an expectation of frequent revisiting and adding to online discussion (Smithson et al., 2011). In contrast, researchers in this forum expected to post occasionally, in longer more elaborate posts. Synchronous activities such as the "Research connections online party," or the dissemination webcasts with a set time, topic, and interaction with a wider group of stakeholders worked better than a general open-ended asynchronous forum. This was partly because the "online party" occurred during a physical team meeting, so all team members were ushered into a computer lab and encouraged to communicate online.

3.2.2. Distinguishing Academic and Forum Discourse

Gallagher (2009) used the concept of "social writing" to help students contribute to an online discussion. He contrasted the traditional academic goal of "writing solo" with the aim of proving a point to others and reaching closure, with a discussion board format of "writing socially"—exploring a topic collaboratively, and deferring closure. Writing solo involves distinguishing the author's views from others, conversely on discussion boards participants build views with others. The social context of a forum, and the way the technology is set up (Eustace, 2008), is crucial—people need motivation for joining, posting, and returning to an online community. Pfeil, Zaphiris, and Wilson (2010), in a study of online support for older people, concluded that *conversations that went off topic were related to a decrease in the level of activity.* Himelboim, Gleave, and Smith (2009) investigated features of "successful" political discussions, noting that on their studied site, a small number of messages and authors received a significant proportion of replies. They identified items that became "discussion catalysts", "filters," and "amplifiers."

These studies of forum discussion may help understand the tension between traditional expectations of academic writing and the requirements of collaborative work.

In GaPL there was a clear preference stated by various team members for a more formal, academically oriented interaction. There were also a number of instances of what Tannen (2002) terms *agonism* in academic discourse—an adversarial style. This particular (historical) conceptualisation of the way academic discourse takes place is in contrast to recently emerging expectations of how to work collaboratively (Dalke, Grobstein, & McCormack, 2006; Tiainen & Koivunen, 2006), and how to communicate electronically (Crystal, 2008). The GaPL group members remained unconvinced, that online forums were appropriate for academic collaboration. The concept of social academic writing (Gallagher, 2009) was in direct contrast to their experience and expectations, even on a collaborative project. To recognise these different modes of interaction, team members may need examples of jointly produced work.

3.2.3. Ensuring Focus and Relevance of Forum Topics

Hennessy and Walker (2010) argued, "[f]irst and foremost was the underlying principle that the research problem should always be the prime driver of inter-disciplinary collaboration, inappropriate projects should not be created solely for the sake of multi-disciplinarity" (p. 59). While the GaPL researcher forum was not intended to be collaboration for its own sake, it became this, with exhortations to post to make the forum work, rather than for the purpose of achieving wider research goals. When the forum aims were narrowed down to specific topics to be discussed or tasks to be completed, team members participated more fully. While concepts of connectivity and interdisciplinarity were key to the overall project, online discussion was more successful when discussing particular workpackages' findings.

3.2.4. Addressing Challenges of Collaboration

Challenges specific to online communities of practice need to be set within the broader perils of trying to achieve what Huxham (1996) calls "collaborative advantage." Research suggests that aspirations to work together across organisational and disciplinary boundaries often hit major difficulties because of a range of factors such as negative stereotypes (Barrett, Sellman, & Thomas, 2005), lack of trust (Cameron & Lart, 2003), an unwillingness to span boundaries (Williams & Sullivan, 2009), and the opportunity costs imposed on actors who are asked to collaborate (Means, Richards, & Smith, 2008). Heckler and Russell (2008) argued that emotional engagement and good personal relationships are critical to effective collaborative working. There is an emergent literature on how these challenges are just as prevalent in colloborative research as they are in other collaborative endeavours (Eales, Means, & Keating, 2012). Researchers were assembled for the GaPL project at different stages of its development and this made it difficult to generate the level of buy-in required for an immediately effective online community of practice.

3.2.5. Making Technical Support Available

Despite the research team comprising academics, accustomed to using email and other Web technologies, there was a clear need for guided technical support for each new type of technology or event (video, webcast, forum posting, etc.). It is easy to underestimate the support required by people already experienced in some online formats to participate effectively in other, unfamiliar formats.

4. Conclusions

Over the course of the GaPL project the team effectively worked together on a wide range of joint activities and outputs requiring interdisciplinary collaboration. These included interdisciplinary symposia (Hennessy, 2011; Means, 2011) and numerous presentations at academic conferences outside the participants' home disciplines (gerontologists delivering articles at geography conferences and vice versa), in addition to co-authored journal publications reflecting multidisciplinary input and interdisciplinary methodologies and conceptual development (e.g., Fenge & Jones, 2012). While the online discussion forum was intended as a principal vehicle for communication and the promotion of the fertile cross-disciplinary collaboration that did occur, to a significant extent these exchanges and development happened outside the online forum.

To what extent was our struggle the product of some features of the GaPL project, including the nature of the research question and the kind of researchers involved? Some of the challenges to online communication we encountered might reflect the structure of the project (with researchers' principal focus on their particular workpackages), and an academic "digital divide" expressed in the attitudes toward the technology and appropriate forms of online expression discussed above. Evidence emerging from other large scale cross-disciplinary projects involving researchers in multiple locations, however, has demonstrated similar problems around the use of such methods for collaboration (e.g., Orford et al., 2012).

The lack of communication might be a result of the structure of the project (divided into workpackages) and how some collaborators were recruited very late in the development of the project (with resultant reduced overall buy in). Confusion over terms like interdisciplinary and multidisciplinary could have contributed to this, as well as the "too academic" attitudes discussed earlier, including a tendency to teach rather than learn.

We conclude with a few reflections on what we would do differently another time. Our understanding of a discussion forum "working" is when team members post without coercion and find some aspects of the discussion useful. We would focus on setting up particular tasks, or items to debate, within a set timeframe (synchronous talk), with a moderator available to deal with technological problems. We would encourage people within workpackages (already working in groups within one or two disciplines, typically, on a particular set of tasks) to work together online, before trying to make this work across a large diverse team. We would also start the project by familiarising participants with existing examples of ways of collaborating and writing academically online.

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