

[working paper: draft]

Putting Collaborations into Collaboration

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Introduction: Serious Experience

In this essay, I seek to provide a description of the collaborative process, or rather of one specific collaboration in which I was involved. Funded by the UK-based Engineering and Physical Sciences Research Council [EPSCR], this project brought together experts from several fields to explore the potential of using games and the mechanisms of game design as an educational tool. Our aim was to engage ‘code-citizens’ in software security, and through participation in game design workshops encourage them to recognise safety risks, share responsibility and learn how to code more securely. As well as engaging individuals or selected groups of representative code-citizens, the project sought to trial a whole methodology for a game-approach to code security. It also promised to produce and exhibit a small sample of illustrative games, co-created with workshop participants, and committed to a range of other outputs such as academic publications.

It was therefore in many ways a very normative kind of collaboration, typical of countless university projects sponsored by the UK’s research councils since at least the late 1990s. This development, mirrored elsewhere in the global university, endorsed the collaborative process as a means of both experimentation and problem-solving, often premised on the assumption that collaboration added value or enabled those identified as having relevant expertise to move beyond disciplinary or institutional silos. The overriding sense of purpose that informed much of this collaborative endeavour centred round the ideal of working towards some common goal, to which each project member contributed as recognised experts (see Thrift 2006). Although in a UK-context such collaborations initially exhibited other ambitions- perhaps due to the early foregrounding of collaborations between scientists and artists and the accompanying stress placed upon the value of ‘nurturing synergy’ and ‘creative partnerships’ (Leach 2007)- the commitment to instrumentalism has generally prevailed. Indeed, any space for experimentation is usually explained as means to project goals; and creative partnership are today rarely an endpoint: i.e., enough to justify collaboration on its own terms.

Of course, anthropologists have also embraced collaboration as a metaphor to redescribe their own research practice, or as a metaphor to capture what they hope the anthropological process might become. For instance, it is now quite common to hear anthropologists invoke collaboration as a good that one ought to strive towards, especially in the context of debates about how anthropological knowledge is produced or about what counts as an appropriate outcome of anthropological work when that process is viewed as collaboration. Suspicions about the tradition of description, epitomised in the single-authored text, are joined with a willingness to embrace alternative outcomes of scholarship such as policy proposals or social movements or artworks (cf. Holmes and Marcus 2008; Kelty 2017; Rabinow & Bennett 2012; Rappaport 2005). Or by a desire to critique the whole

presumption of outcomes; this is often informed by feminist commitment to acknowledge specific sets of relations as the proper achievement of collaboration.

With the latter ambition in mind, I highlight the example of Meridian 180, a self-consciously experimental collaboration between scholars, policymakers and professionals, significantly informed by ethnographic practice and extensively documented by Riles (2017, 2022??), one of its chief instigators. The project immediately impresses because of its extraordinary size and scope. Riles reports that, 'At its height, Meridian 180 counted over 1200 members from 39 countries, encompassing the fields of law, finance, business, policy, the NGO community, the arts, and the academy, with offices at leading research universities in Tokyo, Seoul, Sydney, and Ithaca, New York' (2022: introduction: 6). But what especially intrigues are the way in which Meridian 180 simultaneously embraces and challenges the form and expectations of collaboration. At one level a clearly recognisable community of experts, the project nevertheless assumes that members will not solely collaborate based on their expertise. Indeed, part of the self-definition of Meridian 180 is that it is a collaboration born out of a perceived crisis of expertise (2017: 186). As a result one of the core principles of the collaboration is that members bring 'their professional backgrounds and expertise but explicitly shed their professional responsibility in order to speak only for themselves' (2017: 184). Meridian 180 is deliberately non-normative in other ways. For instance, the collaboration eschews demonstrable outputs, and actively resists the expectation that members are working towards tangible goals (2017: 187). There is an equivocation about purpose and an embrace of the principle of play. 'In Meridian 180,' Riles writes, 'we acted "as if" we are seriously collaborating towards some other end- some output, such as... legal reform proposals, consultation among policymakers or book publications. And yet, the ultimate purpose remained curiously undefined with explicit and implicit cues communicating "this is only play" at certain moments...' (2022: chp1: 41).

Across my essay, this example will serve as a counterpoint to the collaboration that I will describe. Although I was a member of Meridian 180 and participated in a few of its online forums, that engagement is not meant to suggest any kind of comparative ethnographic exercise. I don't feel qualified to speak about the practice of Meridian 180 in any first-hand sense. Instead, I want to rely on the description provided by Riles to help throw the terms of collaboration within our project into productive relief. For on the face of it, the motivations behind these two examples of collaboration and their principles of operation could not be more different.

However, the point of the juxtaposition is not simply to mark an opposition, or to emphasize the normative dimensions of the collaborative process of which I write. Rather, I wish to use my ethnography to provide a reading back or another way of interpreting the Meridian 180 experiment, grounded in aspects of the expertise that was recognised and formally deployed in our EPSCR-funded project. Indeed, I want to suggest that it might be productive to re-imagine Meridian 180 as a kind of 'serious game.' That term is indigenous to the EPSCR-funded project and to the wider field of expertise within game design upon which our collaboration centrally drew. Broadly used to denote games designed for educational purposes rather than entertainment, the process and methodology of serious game design structured the way engagement with code-citizens on the issues of software security was conceived. Of particular interest is the emphasis placed upon the cultivation of a 'serious experience' (Mekler, Iacocvides & Bopp 2018), as opposed for instance to an experience grounded in just having fun; and the accompanying question of how to integrate moments of critical reflection into the design and playing of games. For although serious

games can, of course, also be fun that is not their primary purpose. Instead, the ambition is to reach for an encounter ‘where negative emotions can lead to positive experiences, producing eudemonic appreciation [i.e., contentment from having purpose in life],’ and in which ‘games can be *rewarding*, whether or not they are also *enjoyable* [original stress]’ (Abbot, Chatzifoti, & Louchart 2022: 2). As we will see, the seriousness of serious games can include ambitions to problem-solve but also to provoke and raise awareness; its purpose as an educational tool is often broadly moral in tone.

But what makes the idea of thinking about Meridian 180 as a serious game further thought-provoking is the contrast between the trajectory of these two collaborative projects. As the quote from Riles above illustrates, within Meridian 180 seriousness is a bracketed concept. Riles tells us that at times project members acted as if they were ‘seriously collaborating’ towards fixed ends, while at the same time regularly sending out signals to each other that ‘this is only play.’ In fact, like much recent social scientific literature on collaboration, which calls for participants to leave a space for playfulness and humour as well as for non-purposeful experimentation (see Calvert & Schyfter 2017), play is marked as something creative to introduce into the collaborative process, an innovation of sorts. Elsewhere Riles (2022: chp 1: 37) invokes the long-established notion of ‘serious play’ as one possible way of figuring activities within Meridian 180, alongside the legacy of Gregory Bateson’s communicative theory of play. And like most other commentators drawing on those examples, Riles makes the point that such play should not be held apart from the concepts of ‘work or seriousness’ (ibid). However, and this is the tension that interests me, play remains either essentially communicative in nature or somewhat whimsically rendered, as well as assumed to be against the grain [especially of conventional instrumentalist forms of collaboration].

By contrast, playfulness as a quality of all games was a rather mundane concept in the ESPRC-funded project. Game designers didn’t need to be told that play was a form of work, for they could automatically see the labour involved in making games, whether for education or entertainment. Just as they presumed that games [and play] were inevitably the result of design. There was nothing innovative therefore about the introduction of playfulness. But there was also no presumption that play was non-instrumental in spirit; their expertise was grounded in the identification of the whole mechanics of game play. And the crucial communicative question was different too. For the design of serious games was all about communicating or sending cues to its players that ‘this is serious’ [and not just fun or enjoyable]. Seen from this perspective, there was a different purchase to the notion of serious play. For if all games necessarily involved play, the issue was not whether play was distinguishable from seriousness but when it was so, and how the serious potential of play might be better developed or harnessed.

The game designers in our project saw games everywhere. They certainly would have had no trouble considering Meridian 180 as a type of game, though I never invited them to do so. For them, the more important question was always what kind of game it was. Not only how it was made or designed and what playing experience it delivered, but whether it was a good or bad game [i.e., as a serious game, whether it produced the serious experience desired]. Although Riles never figures Meridian 180 as a game [the most consistent reference is to the collaboration as an ‘experiment’], those sort of questions do sometimes crop up. In fact, Riles’ original article directly addresses the issue of the collaboration’s success or failure, and particularly the success or failure of one of its core principles: the conceit that the collaboration has no outputs. As Riles (2017: 187) relays, this

principle met semi-regular resistance, not just from those members who needed outputs such as academic publications or policy proposals to justify their participation in the project externally but also from those who found the lack of outputs ultimately uncomfortable or perplexing. In the end, the organizational team at Meridian 180 had to compromise and allow the introduction of at least some conventionally recognised outputs. In this regard, the collaboration came to look rather more like our collaboration; Meridian 180 had to change some of its rules of play so-to-speak mid-game.

In a way, this paper works through placing each collaboration in collaboration, or by acting as if each project asks questions of or provides commentary upon the other. I am concerned to reflexively study how this 'collaboration' unfolds, but like Riles, it is the ethnographic study of the unfolding of one side of this collaboration, defined by its peculiar community of experts, that ultimately underpins the insights drawn. With that in mind, I now turn to consider the nature of our EPSRC-funded collaborative project in more detail.

The project as collaboration:

'In the common understanding,' Riles tells us, 'collaboration is collective activity among differently situated social actors directed towards a well-defined purpose' (Riles 2022: chp 2: 31). The description is offered to throw the original and experimental nature of Meridian 180 into further relief. Riles continues, 'Every partner to the collaboration must understand their own relationship to this purpose, and a focus on this purpose gives the collaboration energy and form' (ibid). As well as highlighting the assumption of instrumentally achieved ends, which the activities of Meridian 180 clearly challenge, Riles is keen to stress that the motif of collaboration typically 'turns on an aesthetic of difference' (2022: 32; & see Reddy 2008: 58). 'One does not collaborate with others who are just like oneself,' Riles advises, 'since by definition the purpose of the collaboration is to enrol different skill sets... and different points of view in the service of the goal.'

If one reads the EPSRC funding application for our project, those principles are front and centre. At the heart of that project is a collaboration between two kinds of distinctive expertise: game design and computer science, each institutionally embodied and represented by listed team members [a P-I or Principal Investigator, five Co-I or Co-Investigators and three RA or post-doctoral Research Assistants], collectively tasked to develop a game-approach to code security. Within the field of computer science, relevant expertise is two-fold; some team members are experts in software engineering and security, others are experts in human computer interactions [HCI]. I am listed as a Co-I with anthropological expertise, charged with providing ethnographic insight into the engagement with code-citizens and with delivering a meta-level observation and description of the collaboration itself. The project employed a Public Engagement Co-ordinator to help recruit participants for its game design workshops and to promote its eventual exhibition of designed games, but additionally contracted an 'Artistic Partner', an Edinburgh-based theatre company 'set up to explore the use of digital technology to entertain and educate audiences through drama.' In terms of the collaboration, the Artistic Partner added two further voices or points of view working in the service of our project goal, the theatre company's director and chief playwright and a principal collaborator of the playwright, who was also a renowned technology journalist. Overall, the project worked across three Scottish universities, with the P-I and all the computer scientists based in a tertiary institution in Edinburgh and the games designers based in a school of art in Glasgow.

One of the most immediate realizations that I came to, in terms of my own designated task within the project, was that a description of collaboration would inevitably involve close ethnographic account of meetings. Indeed, from the get-go our collaborative project was extremely meeting intensive; it is perhaps no surprise that Riles' original article on Meridian 180 came out in a special issue or volume on that topic (see Brown, Reed & Yarrow 2017). To begin with, the collaboration involved attendance at in-person meetings held either in Edinburgh or Glasgow universities, then attendance at online meetings, for the period of the pandemic and lockdown in the UK, before finally returning to in-person meetings once again toward project end. As well as regular whole team meetings with a comparatively fixed agenda, which usually involved update reports from the funded project's different work packages, this included numerous sub-meetings, often defined by specific project tasks. The three RAs, for instance, would hold their own meetings to discuss organizational matters around game design workshops or, post-workshop, around the analysis of data collected by surveying workshop participants. Likewise, the game designers would hold separate meetings to finalize the design and testing of games, sometimes alone but at other times in collaboration with some of the computer scientists or the Artistic Partner. And those with a specialist knowledge of software engineering would meet to consolidate the theme of software security or to develop instructional resources on particular security issues for the rest of the project team and for workshop participants. On top of that, the game design workshops themselves were a closely prescribed or designed form of meeting, again depending on pandemic circumstances either held in-person or online.

Indeed, these various kinds of meetings were the chief events in which the collective activity of collaboration revealed itself, and where the interactions between relevant forms of expertise, working towards a common goal, played out. Meetings were therefore an opportunity for me to observe the collaboration in action. However, I was not the only observer. Especially early-on in the project, there was a strong sense of us all watching ourselves doing collaboration.

P-I: I want to ask the global question. What is it we are wanting to discover through this pilot forum? [the P-I invites the three RAs to respond first]

RA1 [human computer interactions]: I want us to identify how participants prioritize security and its components. How they communicate that knowledge, and how we can use this knowledge in designing games that will feature in the workshops.

RA2 [game design]: And we want to see how they will combine secure coding issues with the gamification practices that we invite them to participate in.

P-I: Ok, the pilot forum should also help identify the secure code snippets that we want to use.

RA3 [software engineering & security]: And it should help us understand the relevant learning process around particular security issues, to assist in the gamification process.

P-I: So, I would recommend we look at how we used gamification in the health rehabilitation process [a focus in a previous HCI project led by the P-I].

Artistic Partner 1 [theatre director]: What's going to be useful to me is to understand the top vision of the project. And how our participants understand security issues and how they communicate those things. I will need to dig into some of the language and then have another discussion.

P-I: I was hoping that you will help with the first part of the pilot forum. You know, in dramatizing the news story [about a security breach] that we want to present to kick discussion off. We wanted [the theatre company] to make this part much more engaging for participants, to address the problems we had before [in the P-I's previous project] when we just circulated an article in a newspaper for them to read.

Co-I 1 [game design]: Sorry, can I ask what is the rationale for gamification? I'm confused as to why we are considering it.

RA1: It's about engagement in the learning process around security issues. We want to gamify that process so people will engage more with the chosen issue.

Co-I 1: Ok, but we are concerned with serious games. Can I remind everyone that gamification and serious games are very different things. Gamification has a focus on performance, whereas serious games have a focus on learning and teaching. We need to be careful here. We need to target participants through a serious games approach rather than a gamification approach.

P-I: Yes, these confusions point us back to the excellent point made by [Artistic Partner 2]. You know, about creating a dictionary, so that we all understand one another, what we are talking about and working on.

Artistic Partner 2 [technology journalist & collaborator with the theatre director]: Yes, absolutely. Though I think at the time I was referring to the need to develop a common vocabulary on software security and secure coding especially. For me, construction of a good metaphor will be key to this working well.

P-I: Don't forget we need to get quality [academic] papers out of the pilot forum too. So, its procedures also need to allow for the collection of good data.

Artistic Partner 1: Can I ask how we will break down the participants? Are we talking about young people, working adults, older, retired people? In our experience, creating cross-generational environments is a positive thing. I would recommend we try and do this. But we also need to think about the groups and how to address all the participants in them.

P-I: Yes, in the health rehabilitation project we ended up having to separate the medics from the patients. For the medics thought they knew best and dominated conversation.

RA1: I agree it's important to think about this.

Artistic Partner 1: Core to our approach at [the theatre company] is the belief that the response offered by a 16-year-old participant is as valid as the response offered by a 60-year-old. For they are all human responses. We always start with each person's emotional response.

Co-I 1: For us, in designing game mechanics, it's really important to know about process. What are the processes in terms of security that need to be addressed through serious games?

Artistic Partner 1: Yes, that's really important for us too. If we understand what the core processes are then we can build a story around them. What's the hook? That's what we always ask. Any story has to have a question, a good hook that can engage the audience.

Co-I 2 [software engineering & security]: Do we want about 30-40 participants for the pilot forum? Perhaps we could recruit computer science students.

P-I: I've spoken to some of our Honours students [third- and four-year undergraduates] about this. They say they are always told to take security issues into

account when coding, but never shown how to do that. So, yes, I think we could definitely recruit them. Maybe offer them the chance of winning Amazon vouchers too.

The extract above is taken from a relatively early project meeting. It reproduces the tone of conversation between team members during a Q&A session that followed presentations from the three RAs on plans for a pilot forum. The forum was designed to gather material and initial feedback on the main security concerns of code-citizens [forum participants were invited to tell their own 'war stories' about software security and the challenges of coding securely], with a view to using that information to help identify the security themes of later game design workshops. One can, I think, straightforwardly see a developing sense of how relevant expertise and distinctive relationship to the common goal was beginning to get articulated, and how terms of interaction between those forms of expertise might unfold. Negotiations are evident as well as corrections based upon expert knowledge, for instance, around the difference between gamification and serious games. There are concerns about the translation of concepts [mainly between the fields of software security and game design] and even a suggestion that a project dictionary might be needed to bridge the difference between disciplinary or professional outlooks.

Additionally, we have the consistent input of the Artistic Partner, either responding to invitations to talk about a distinctive contribution from the theatre company or intervening to offer that distinctive contribution directly. There are also a series of interjections in response to practical organizational matters, sometimes bracketed with expert knowledge but at other times assumed to be open to everyone [for instance, discussion about optimal numbers of participants at the pilot forum or suggestions about recruitment]. In such moments, we are invited to consider ourselves as both expertly and generally competent to respond; the source of that general competence is never explicitly named, but vaguely assumed to be linked to a shared background as professionals.

Of course, even in these early stages of our collaboration, expertise or general professional competence were not the only ways to understand the terms of interaction between us. In the case of the computer scientists in the project, a relationship as colleagues, albeit at varying stages of career development, was clearly important. Indeed, for those of us not from computer science there was an immediate sense that here was a relationship that preceded the collaboration, or that these project members already had a history of collaboration. As well as collaborating as teaching and research colleagues working in the same school within the same institution, some of them had worked together before on other funded projects [for instance, the P-I and RA1]. As we can see from the quoted meeting extract above, one of those other projects on occasions got invoked as a model or precedent in our own project planning. Likewise, the three game designers shared a relationship as colleagues at the same institution. However, any sense of that relationship prefiguring interactions or consolidating institutional difference was also undermined by a history of collegiality. Most notably, as everyone knew or soon discovered the lead project member from the school of art in Glasgow (Co-I 1 in the meeting extract above) had previously worked at the university in Edinburgh and in the same school as the computer scientists. So, for at least some of them Co-I 1 had once been a colleague. As I later learnt that relationship had strongly informed the development of our project as a funding application; in fact, Co-I 1 had previously collaborated on smaller funded projects with one of the Co-Is with expertise in software engineering and security. That same relationship as

past colleagues (and the fact that a serious game designer originally came from a school of computer science) also somewhat perforated the assumption of disciplinary silos being brought into necessary collaboration.

But there were other kinds of relationships identified as either preceding or bridging the aesthetic of difference within our project. First and foremost, friendships and personal relationships. My own invitation to join the EPSCR funding application came as a result of my relationship with one of the computer scientists; we were friends through our wives, who themselves were colleagues in a school of Education in another university in Edinburgh. While it is not true to say that I was only invited to participate because we were friends, it is I think correct to observe that the idea of involving an anthropologist in the collaboration emerged out of that relationship. As I came to realise at varying points, the same could be said of a few other invitations. Knowledge of the highly relevant work of the Edinburgh-based theatre company also first arose as a consequence of personal relationships. The same computer scientist who I already knew had previously met and become friends with the theatre director and playwright, this time as a result of their children already being friends at primary school. And another Co-I from the school of art in Glasgow had previously collaborated with that computer scientist's wife on a funded project within Education.

To be clear, the point of highlighting these personal and professional relationships is not to suggest impropriety or to reveal some secret basis for our collaboration. Rather, much like the foregrounding of the relationship as colleagues, it is to draw attention to the fact that collaborations often or even usually contain competing aesthetics of difference.

Collegiality or personal relationships such as friendship are no doubt also to be found prefiguring in some fashion the Meridian 180 experiment, despite its extraordinary size and scale. Indeed, that observation makes me wonder about the conceit of the experiment. Especially the already cited invitation for members of the Meridian 180 collaboration to 'shed their professional responsibility in order to speak only for themselves.' For the move seems to suggest that suspending or deferring the obligation to speak as relevant experts [working towards a common goal] can feel liberating; Riles reports that members experience speaking only on their own behalf as both 'refreshing' and 'hopeful' (2017: 184). Yet what does speaking for oneself actually mean? Riles' description seems to imply that the hopeful moment is the artefact of shedding professional responsibility or of actively trying not to speak on behalf of that relevant expertise. But, thinking through the origins of our collaboration, I am left wondering what the relationship might be to those other conventional relations of collaboration, such as friendship? And more broadly, about the general thrust of the Meridian 180 experiment, which seems to focus on the achievement of shedding certain kinds of responsibilities in order to prompt a new basis for relating within collaboration. Again, the question might be how those new relations of collaboration connect to the other old relations of collaboration, or to those personal or collegial relationships that appear to precede or co-exist alongside relationships of expertise?

Although these questions emerge from my own ethnography and are addressed towards the Meridian 180 experiment (or at least towards the description of that collaboration provided by Riles), they in some ways belong to sets of reflections that Riles developed in earlier work, when examining another dominant form or trope of transnational organization, the Network (Riles 2001). In a parallel move to the trope of Collaboration, networks were once 'held out as engines to solve the most intractable global problems by bypassing traditional forms of organization, such as the nation-state, and allowing ordinary people to communicate and organize directly' (2022: Introduction: 9).

Indeed, Riles suggests that our current era of Collaboration was preceded by an era of the Network, and that the attempt to describe the experiment of Meridian 180 rested upon an appreciation of ‘the difference between seeing and creating networks everywhere and seeing and creating collaborations’ (ibid). But what interests me about that earlier work on networks is the ethnographic attention paid to the presence of personal relationship. For as Riles highlights, the form of the Network itself worked through an internal tension between the ‘personal’ and the ‘professional,’ almost as though each was a side of the other and both were an essential quality of networks (2001: 58-60). So, returning to our collaboration, one could straightforwardly redescribe relationships such as friendship as attributes of a network also based upon relationships between experts. Relationships as colleagues is a little harder to absorb into the form of the network precisely because it is so heavily premised upon bypassing institutional forms of association. Nevertheless, the exercise leads us again to inquire how collaboration works.

Collaboration as a method for serious games:

Of course, members of the EPSCR-funded project were linked in other ways. Most obviously, they shared an enthusiasm or passion for playing games. I use the third-person plural pronoun here because I can’t claim that distinction; in fact, my relative lack of gaming experience marked, at least for me, a productive aesthetic of difference in my interactions with other project members. But for the vast majority of the team gaming was in the blood, to varying extents part of their past and present history. While few designed games themselves or fully understood the mechanics of game design, the computer scientists were all game literate. Individuals played both video games and board games for entertainment and had a diverse range of favourite game or types of game that they preferred, as did the game designers. For example, the lead Co-I from the school of art in Glasgow loved playing racing games. The computer scientist and security expert that I knew before the project began had always been a fan of city-building games growing-up and now enjoyed playing cooperative board games such as Pandemic with friends. And the second Co-I from the school of art liked puzzle games but also sometimes participated in live action role playing games [LARP]. Others appreciated adventure games or real-time strategy games.

It is true that few played serious games. The exception being Co-I 2 [from the meeting extract quoted earlier] who not only enjoyed history games but had a non-work background of collaborating with academic historians in designing games that educated players about a period of British history. However, a gaming knowledge or set of relationships (Co-I 2 sometimes organized game sessions with computer science colleagues) foreshadowed our collaboration and regularly fed into our discussions and planning meetings.

This was especially the case for those meetings set-up to organize the game design workshops or ‘Slow Game Jam.’ This was a term invented by the project to describe their adaptation of game jams [i.e., 24hr or 72hr events where teams compete to design a game from scratch] as a tool for wider purposes (see Louchart, Abbott & Chatzifoti 2023). But it was also the case for the workshops themselves, which explicitly deployed a collaborative method. Just as serious game design naturally required collaboration between game designers and experts linked to the topic or issue to be made the subject of a serious experience, so it was determined that the Slow Game Jam [‘slow’ refers to the fact that the workshops were spread out over several weeks rather than concentrated into a 24hr or 72hr intense period] would be organised along similar principles. The workshops would

require participants to learn through collaborating to design a serious game, and ideally team members would be selected for their distinctive and complementary skill sets. Furthermore, that collaborative process would be necessarily supported by the guidance and mentorship of project experts (Louchart, Abbott & Chatzifoti 2023: 6), especially the game designers and those computer scientists specialising in software security.

By way of illustration, I select an extract from an online design meeting of one team during our first Slow Game Jam. In this case, the team members were in fact project experts, so the two levels of collaboration were collapsed [the result of a crisis of recruitment during lockdown]. Retrospectively, this proved a highly useful exercise since it enabled the project to trial and experience the Slow Game Jam first-hand, and enabled me to witness project experts in action, working in tandem in the early stages of designing a serious game informed by principles of secure coding. As we will see, the extract also highlights the ways in which communicating pre-existing gaming knowledge or play experience bridged their interaction.

Co-I 1 [game design]: So, to recap, I think we are talking about a city builder game, in which players manage a development resource budget and they have to balance growth and security.

Co-I 3 [software engineering & security]: Yes, but we decided that this is a city that lives in a computer. So, we will have 'bitizens' rather than citizens. [Everyone chuckles]

Co-I 1: Right.

Co-3: But I wonder how we can best capture the idea that if components in the game are not protected or resilient against attack that might make game objects in the city vulnerable to destruction. Or might make it's bitizens unhappy, especially if they have a sense that they live in an unsafe city. Might there be resource benefits that make it worth mitigating against cyber-attacks?

Artistic Partner 2 [technology journalist & collaborator with the theatre director]: Could one of the resources be 'data.' Bitizens have personal data and corporations in the city also have data. If bitizens lose privacy their data gets taken away, so they feel bad. Players need to preserve data to prosper.

Co-I 1: So, data will be our resource. That will be explicit. Like we said, it's about mixing up fiction with something [players] can associate with in real life.

Co-I 3: Ok, if the resource is data, then growth in the city is 'programmes.' To grow the city within the computer you need to build more programmes and protect them from data attacks.

Artistic Partner 2: I'm thinking with my mouth open here, but could we make this a proxy for the issue of how secure to make programmes versus the issue of how productive they are.

Co-I 3: Yes, maybe. If input to these programmes is data, output could be more programmes or analysis tools, because one secure coding issue is when another programme comes and steals data. Or when programmes just leak data. So, if the input data or investment in data was very small then the programme would be leaky and easy to attack.

Artistic Partner 2: One could have a concept of quality. If the programme leaks data or has lots of security holes or is not maintained, then the chance of it going wrong

would go up or you could even have catastrophic failure. [The player] might get lucky if they don't bother with code quality but the chances are lower.

Co-I 3: Yes, but the key learning outcome would be that coding securely should be a first-class priority or at least go hand-in-hand with writing software. I wouldn't want a learning outcome to encourage the idea of taking a risk with that.... If the point of the game is happy bitizens that also needs to be quantified. [Players] need to know how near the end goal of the game they are.

Co-I 1: And we need to think about the balance of the game. Perhaps it's about putting other strategies in place or generating enough data. Has anyone played *Catan* [a multi-player boardgame where players take on the role of settlers attempting to develop smallholdings]? There, the end goal is about attaining a certain number of main resources and the balance is between spending resources to generate more resources or spending money to build a base on the board. The base does not bring you anything extra, but it does advance you towards completion of the end goal. We could implement something similar. Maybe players could buy special programmes that don't bring immediate benefits but do advance your position. Or we could have something more mechanical that results in the player getting extra bitizens. The simplest thing would be to say that investing a certain amount of data enables the player to complete one element of the goal. A city secure to that point is the aim and you spend data to buy it.

Artistic Partner 2: I think we need a heuristic of bitizen happiness to speed things up.

Co-I 1: We could use randomization and odds, like roll some dice.... But I am wondering if we should make it a cooperative game. Ideally, in terms of learning, we want players to be able to talk to each other.

Co-I 3: What about that game... You know, the one where in the end there is only one person left but you need to build teams along the way.

Co-I 1: Don't know it. But what about *Forbidden Island* [a multiplayer boardgame where players take the roles of adventurers looking for hidden treasure; all players win if they find the treasure and escape the island, but everyone loses if they cannot]. We can do that, but it's not necessarily easy to design as it requires a lot of balancing. It will generate a lot of quality discussions between players in the same team. But there are risks there. If the system or the game wins, as it often does, that can leave a bitter taste. And if we design a cooperative game with a collective task there is far more chance of someone sitting back and letting the rest of their team make the decisions. Or you get the risk of having a dominant player.

Co-I 3: There was a game we once played with [another Co-I and security expert in the project]. It's a card-based game. You play as a team versus the game, but no one can speak. Even if you know [because of the cards held] what your teammates should be doing, you can't tell them. So, you have to rely on the competence of your colleagues, which is just what it's like in software development teams. I am wondering if we made it a two-player game if that could be more cooperative. You know, you have a verification person and a developer, each needs to do their role in silence and takes action without help.

It was exciting to witness conversation about the design of a serious game in real time. Indeed, participating in that Slow Game Jam was the closest I came to feeling like our combined forms of expertise [mine far less than the others!] were working in tandem to

produce a concrete outcome: i.e., a prototype for an actual serious game. As I hope you can see from the extract, the sense of individual team members speaking from their point of relevant expertise is tangible as well as a sense that each is learning from the other. And the sense of game literacy is pervasive. Options for different types of games are thrown out [with hyper-links to further suggestions added in our shared comments box] and team members invoke various games as possible models for the serious game being designed.

This includes repeated reference to the possible utility of cooperative games, a form of game in which players work with one another to achieve a common objective. Indeed, it is clear from the discussion that there are a variety of cooperative games cited; for instance, those games where players temporarily work together but ultimately end up competing against each other as opposed to games where players must succeed or fail together. To me, teammates descriptions of cooperation sounded a lot like collaboration; at the time I couldn't help speculating what kind of cooperative game we would end up playing as an EPSCR-funded project!

However, it soon became obvious that my analogy was misplaced or overly simplistic. For as my teammates later made clear, within the world of gaming there was a live distinction to be had between cooperative and collaborative games [even if that distinction is not evident in the extract quoted above]. While our design meeting continued, I quickly googled an explanation and arrived at a set of comments posted to the site BoardGameGeek.com. 'Collaboration,' I read, 'is an act of will within a shared context, usually to the effect of getting closer to a shared goal.' But with the proviso that the 'perfect decision' or ultimate solution 'cannot always be figured out.' In this regard, collaboration is 'non-deterministic.' The post then moves on to make the distinction. 'Cooperation is a behaviour that benefits the shared goal.' But since in this scenario 'you are entirely replaceable there is always one decision that is perfect, and it can always be figured out which one that is.' Cooperation then is 'deterministic' (BoardGameGeek.com 2017). The post thread later clarifies that point by returning to the definition of collaboration. 'The core idea is that collaborative games allow you to make decisions ON YOUR OWN... Never can someone else make a better decision than you for yourself.' In both types of games, players strive towards shared goals and to align themselves in some fashion with other players, but wilful decision-making is only a required component in collaborative games.

From a game-play perspective, the issue here is about replaceability. As the author of the forum post emphasizes, the origin of the word cooperation suggests an 'obligatory act of being part of a process, as a gear is part of a machine.' You as a player may be indifferent or even adverse to that operation, whose goal is 'set from the outside,' but the game requires you to nevertheless follow along. And whether you do so or not, the game continues in the direction determined. In this sense, the post states, 'You are forced to cooperate.' It is important to stress that there is no value judgement in this distinction. The author is absolutely not suggesting that collaborative games are better because they 'allow you to make decisions on your own.' Rather the point is about quality of playability and the different possibilities for stimulation or entertainment that each type of game offers. This is evident from the neutral description of different examples of games that follow that definition. So, to select a game already mentioned and enjoyed in their spare time by at least one project member, we read that, 'Pandemic is a cooperative (shared solitaire multiplayer) game because you have total information and without a time constraint it is just a matter of time before you can find the best decision' (BoardGameGeek.com 2017).

Of course, the extract from the Slow Game Jam that I quote above is from a team meeting charged with the design of a serious game. Hence, there are other questions to consider. When examples of games are cited, team members immediately inquire about the fit with ‘learning outcomes.’ These are eventually identified by the team as awareness of ‘cyber security threats related to the development of code base’ and of ‘repercussions for code-citizens and users,’ as well as lessons on ‘planning and preparing against threats’ and ‘understanding the value of integrating security early.’ More widely, they encourage each other to consider how the qualities of certain types of game may feed or disrupt the serious experience. Co-I 1, for instance, can see the benefits of using a cooperative game template [the choice here is not about making a differentiation from collaborative games], since it necessarily enables or requires players to talk to each other throughout the game, and hence provides a clear opportunity for critical reflection and mutual learning. However, at the same time Co-I 1 remains concerned about the effects of cooperation; where game tasks are shared or collective there is always the risk of disparate player engagement.

With the dynamic of all these discussions in mind, I am prompted to return to my original suggestion that it might be productive to re-imagine Meridian 180 as a form of serious game. Building on the terms of interaction in our design team, we might ask, what types of game should the collaboration be compared with? For instance, is Meridian 180 more like a collaborative game or more like a cooperative game? On the face of it, the answer appears straightforward. Premised on the starting invitation to ‘shed their professional responsibility in order to speak only for themselves,’ the game seems to rely on giving players the sense that they have been released to make decisions on their own. That is to act as though they were only speaking for themselves and not on behalf of an institution or profession. And the game proceeds on the assumption that distinctive interactions between players ensue on that basis [the game only works because players are required to demonstrate wilful action]. However, things begin to look more complicated when one considers the question of the player’s relationship to the operation of the game. For although players speak or act only for themselves [and apparently as themselves], there is a strong sense in which the goal or terms of that operation are heavily designed and open to being perceived as set from the outside. In this sense, Meridian 180 looks rather more like a cooperative game.

Let us look in a little more detail at what Riles describes as the collaboration’s ‘rules of engagement.’ For we are told that these were ‘purposefully designed to be the antithesis of the grandstanding and self-promotion of most social media platforms, blogs, list serves, and websites’ (Riles 2022: Introduction: 6). Rule 1: ‘to encourage risk-taking and discourage public posturing, conversations happened in private and were not permitted to be quoted or disseminated’ (ibid). Rule 2: ‘to break the aesthetics and politics of academic scholarship, we limited posts to a given number of characters equivalent to a few paragraphs; citation of oneself or others, or promotion of one’s research, were forbidden.’ Rule 3: ‘to escape some of the pitfalls of English dominance and to explore ways in which, as anthropologists understand well, meaning is transformed and flourishes through translation, we supported the costly and logistically complex translation of all posts into four languages, Chinese, Japanese, Korean, and English’ (2022: Introduction: 6-7). There is then a deterministic context for gameplay, even a sense in which players are forced to cooperate in quite specific ways. Once again, the point is not a value-judgement, merely an observation about the kind of playing experience allowed.

As previously discussed, the other core rule of engagement is an active eschewing of demonstratable outputs. Riles (2017: 187) tells us that players are invited to resist the expectation that they are working towards tangible goals. So, one might ask [drawing directly back on a conversation in our design team meeting], how do these players know how near the end goal of the game they are? And what is the relationship between completion of that end goal and other actions of the game? [Co-I I reminds us that core aspects of game play are not necessarily connected with the completion of the end goal, or that certain moves may advance one's position towards that end goal without necessarily bringing immediate benefits in terms of other important aspects of game play]. Such queries perhaps help finesse aspects of the Meridian 180 project. For instance, might it be useful to differentiate the desire to eschew outputs from the need for players to be able to orient themselves in relationship to the game's end goal? Is it necessary to also eschew the idea of game completion or the idea of players moving between elements or stages of the game? These seem to me quite important questions, especially when one remembers that we are talking about a serious game. For members of Meridian 180 are expected to have a serious experience as a result of engaging in play. They are expected to learn something through being forced to cooperate in this fashion; even if that learning outcome is a suspicion of instrumentalism within collaboration [of course the language of learning outcomes is itself instrumentalist] or just a greater awareness of the other potentials in the act of collaboration.

Thinking further about the conceit of Meridian 180 through the example of the conceit behind our collaboration, and more specifically through the prescribed process of the Slow Game Jam, I am left with a final observation. This time it's about the relationship to rules. For one of the aspects of the design process that surprised me most was the fact that discussion about the rules of the game under design was often held back. I had expected, as someone with a cursory understanding of gaming [i.e., everyone knows that you have to read the rules of the game before you start playing] that we would need to pin these down first, just in the manner that the 'core idea group' behind Meridian 180 clearly did when it laid out its rules of engagement (Riles 2022: Introduction: 7). But as Co-I 1 and his game design colleagues on the project pointed out to us, in fact discussion of game rules usually comes relatively late. For in their minds and in the broader conventions of game design, setting the rules was first and foremost about reflecting upon what still needs to be explained or about the action of identifying and responding to the perception of gaps in design. This didn't mean that our game designers had a relaxed attitudes to rules. Far from it. They were strongly exercised and often incensed when discussing examples of games that they felt had poor rules; I remember with a great deal of affection a lively conversation about the rules or lack of rules in Quidditch, the central game of the *Harry Potter* novel-series and universe. So, I end with a question. How might the gameplay of the collaboration known as Meridian 180, and the serious experience it aimed to produce, have differed if the rules of engagement were also held back in the design process? That is, if they were viewed as rather more about plugging gaps than purposefully designing how the experiment was to be conducted.

Conclusion: the theme of collaboration:

There were numerous other ways in which our EPSCR-funded project addressed or indexed principles of collaboration. For instance, as well as making the collaborative process a core methodology within the Slow Game Jam, it identified collaboration as the theme behind one

of its Small Provoking Games [SPGs]. These were short games built by the game designers in consultation with other project members, especially the Artistic Partner, with the intention that they would be played by participants of the Slow Game Jam before they began the design workshops. The point of the SPGs was to set the mood and get participants thinking, both about core software security concerns and the demands of serious game design. As the title suggests, the games were meant to be disruptors. In certain ways ‘subverting of player expectations,’ each SPG operated through ‘withholding information about game rules’ on the assumption that this ‘forces players to experiment, explore, and actively construct their own meanings and mental models’ (Abbot, Chatzifot & Louchart. 2022: 9). More broadly, the provoking game was understood to deploy ‘the techniques of reflective game design to produce cognitive and affective challenge,’ with the aim of initiating ‘exo-transformation’: i.e., attitudinal or behaviour alteration in practices outside the game (2022:1).

In the second SPG, the theme of collaboration was visualised and disguised through the metaphor of eco-system; the adoption of metaphor was essential in these games since it enabled post-play activity, especially critical reflection, but also dialogue between players about the meaning of the game and its relationship to possible cybersecurity scenarios (2022: 9). *Collaboration* [as project members titled it] was a single-player, turn-based, puzzle game. At each level of the puzzle, the assigned task was for players to find the appropriate actions to sustain the seven coloured lanes of a rainbow located in a digital rainforest, which featured other automated characters or creatures alongside your own and a dynamic environment with a periodic monsoon season. Designed to represent a publicly used software application with specific cybersecurity requirements, the rainbow was conceived to output ‘rain’ or data into the environment, whose flow could be corrupted if the infrastructure was insecure. Likewise, the trees stood for the user community that relies on that infrastructure and the monsoon seasons for the duration of software development team projects. Indeed, the chief ambition behind the game’s design was to simulate the experience of working in software development teams and the accompanying challenges for cybersecurity. Just as lack of overview or a lack of proper communication between project team members could lead to secure coding failures, so players had to learn that the rainbow’s health depended upon characters in the digital forest working together or collaborating in a range of fixed combinations. In post-play discussion, participants could also learn that the faces of the automated characters represented different personalities that one might find in a software development team [the characters in the game behaved in a manner interpreted as simulating those personality types] and that the different lanes of colour in the rainbow stood for diverse kinds of expertise or skill sets within the team.

One of the interesting things about provoking games is that they feature ‘expected failure’ alongside exploratory gameplay and techniques of distancing and surprise (Abbot, Chatzifot & Louchart. 2022: 3 & 9; & see Khaled 2018). It is rare that players complete a provoking game or rather completion is not necessarily the point. This was evident in the post-play discussions of Slow Game Jam participants, many of whom only finished a few of *Collaboration*’s 15 game levels. And in the fact that only a minority interpreted aspects of the metaphor correctly; although with prompting from project members, there were lively discussions about the issues of communication and personality management in software development teams, and more broadly about the challenges of collaborating well to code securely.

In fact, I think one could make a case that the example of provoking games more accurately reflects the spirit of the Meridian 180 collaboration, or at least of the design

intentions behind its rules of engagement. As we have seen, there is clearly an ambition for that experiment to disrupt certain norms of collaboration and to make project members critically reflect upon their expectations or upon the expectations imposed upon them [by say, institutional actors] through the action of play or the provocation of doing collaboration differently. And while there are obvious differences- the core idea group of Meridian 180 imagined that the rules of engagement were reached by consensus and there was no deliberate withholding of information about game rules in order to force exploratory gameplay- I believe that the analogy holds some value, for instance in helping us look again at what Riles describes as the unsustainability or 'ultimate failure' of the collaboration as an institutional project (2022: Introduction: 8-9). For retrospectively, one can't help wondering if expected failure was not also built into the design of Meridian 180. Riles suggests as much in proposing what might count as a 'feat' or learning achievement from this serious experience. For a period, Riles tells us, the experiment 'held the "ends" of collaboration in abeyance,' and it did so 'long enough to allow us to appreciate the "means"- the methods and techniques- of our professions and disciplines,' and thereby 'to revisit each of our expert tools by redeploying them against and alongside other's tools' (ibid: 9).

As I hope should be evident, the collaborative ambitions of our EPSCR-funded project were far more conventional. There was no rage against instrumentalism nor suspicion of outputs. Quite the opposite. Yet I hope I have demonstrated that the conventions of collaboration can deliver their own surprises and disruptions. If I had more space, I would have liked to explore this further; for instance, by a consideration of another key attribute of funded collaboration between universities: i.e., the Collaboration Agreement. This document reconfigures the issues of collaboration as a matter of trust and of intellectual property rights, again largely focused on conventional outputs such as academic publications. But that is another apparently familiar story. So, I prefer to end by returning to the principle of this paper, which was all about putting two very different kinds of collaboration in collaboration. Without exactly endorsing the feminist critique of the whole presumption of outcomes, I want to suggest that it is that new relation that should be acknowledged as the proper achievement of this collaboration.

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