

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

STARTS Residency Public Report

Data Stories

Dan Barnard and Dr Tom Blount

Abstract *Smoking Gun* is a thriller which unfolds via your phone. You must solve puzzles, scrutinize documents, wrangle datasets, and chat about evidence with fellow players to uncover what is going on at the heart of a potential whistle-blower scandal. It was created by artists Fast Familiar in residence with the Data Stories project. The main aim of the project was to see how people engage with data if it's made meaningful to them through interaction and narrative. We undertook an iterative design process, including two phases of user testing. Fast Familiar led the design and development process, with Data Stories providing data science expertise. Two main research directions have been facilitated: research of the creation process itself, and research into the way in which the public consume and engage with the artwork. The artistic impact of the residency has allowed us to create a new type of interactive performance taking place over several days and involving a non-co-located audience. Through this process we created a platform which could be used to create other artworks or training tools which take a similar form. We also arrived at some useful principles for arts/science collaborations: respecting each other's expertise and roles and empowering each other to ask when we did not understand. In future Data Stories want to collaborate with Fast Familiar to use the platform to tell more stories about data, investigating how people collaborate in different problem-spaces. Fast Familiar are planning to release the piece to a wider audience in spring/summer 2020.

Index Terms— Data communication, Digital performance, Human-data interaction, Interactive digital narrative

I. INTRODUCTION

Smoking Gun is a collaboration between artists Fast Familiar (Rachel Briscoe, Dan Barnard and Joe McAlister) and Dr Tom Blount from the Data Stories project at the University of Southampton. Fast Familiar undertook a residency with the Data Stories project to explore how people engage with data if it's made meaningful to them through narrative and game mechanisms. The residency entailed a series of knowledge-sharing workshops (detailed below), the creation of *Smoking Gun*, an artwork that unfolds via your smartphone over a 5 day period in which participants scrutinise various types of data to find clues, solve puzzles and piece together a story about a potential whistle-blower scandal and the design of a research project to analyse how audience members engaged with the data in the piece and what difference the process of embedding the data in a narrative and puzzle form made to the nature and depth of this engagement.

II. ARTWORK

Smoking Gun is a thriller which unfolds via your phone, placing you at the heart of a potential whistle-blower scandal. It takes a playful approach to exploring the power of data in the age of disinformation. *Smoking Gun* takes a playful and interactive approach to exploring the power of data in the age of disinformation. You must solve puzzles, scrutinize documents, wrangle datasets and chat about the evidence with fellow players to uncover what is really going on at the heart of government. But as

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your investigations take you deeper, it's hard to know who and what to trust. As the marketing copy puts it, this is *Don't F*ck with Cats* meets *The Capture* meets John Le Carré - except you're making the decisions.

The goals of the residency were to explore whether narrative and game mechanics change the way the public engage with data. Can it encourage people to engage with types of data they might not otherwise? Can it encourage them to engage more thoroughly and rigorously than they might otherwise? The main outcomes of the residency were:

- An interactive digital artwork that is available to the public that can be experienced via smartphones or tablets
- An in-depth knowledge exchange between the academic and artistic partners
- The creation of a platform for research into collaborative data analysis

III. METHODOLOGY

We began by deciding that the main aim of the project was *to see how people engage with data if it's made meaningful to them through narrative and game mechanisms*. We then identified three sub questions:

- 1) *Which of the different data "clues" in the piece do people consider most important?*
- 2) *Which do they notice easily? Which do they miss?*
- 3) *How do different ways of presenting data influence how people engage with it?*

We (artists Rachel Briscoe, Joe McAlister and Dan Barnard, in collaboration with researcher Dr Tom Blount) began the process by undertaking a series of workshops exploring:

What all the different kinds of data were that we could use as part of the story, that we could invite audiences to engage with, and

How they might engage; what things could we ask people to do with data?

We also approached the experience from an interaction design perspective, thinking about exciting things that could happen, twists and turns in the story that might be possible and dynamics that the player might enjoy. We knew from the start that we wanted to create something that would appeal to a diverse range of people, not just those who were already interested in data or digital art. We also approached the experience from an interaction design perspective - thinking about exciting things that could happen, twists and turns and dynamics that a player would enjoy - really early on we knew we wanted *Smoking Gun* to be fun to play - that was really important if we were going to make something that would appeal to a diverse range of people: not just those who are already interested in data or digital art.

Prior to this project, the artists involved had imagined that data was somehow neutral but collaborating with Dr Blount helped them understand how far this was from the truth; an idea that is now at the heart of the artwork. It also made them aware of the existence of synthetic data sets, which were incorporated into the piece.

Following these initial workshops, the artists embarked on an iterative design process involving:

- Narrative construction: we created a core narrative that audience members would be able to discover through the clues that they received over the course of the five days of the piece.
- Deciding which types of data would reveal which elements of the narrative: we created a list of all the different possible types of data that could be included in the piece and explored which type of data (e.g. graphs, spreadsheets, financial accounts, computer UUID logs, security camera photos etc.) would work best to reveal each element of the narrative.

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

This process also involved some tweaking of the narrative itself as one of our key aims became that each piece of the fourteen pieces of evidence would feature a different type of data or way of presenting data.

- Experimenting with the best order in which to give audience members the evidence so they piece together the story in the most satisfying way possible. We realised that the chronological order of the story was not the most satisfying order for people to receive the evidence - just as real detectives and investigative journalists have to piece together the order of a story from the different clues they find.
- Research into how to make the evidence data as authentic as possible. For each type of data and form of evidence included in the piece, we researched how to make it appear as authentic as possible, studying and modelling instances of these things as they appear in the real world.
- Creation of evidence data: drawing on this research, we created each element of evidence in as authentic a way as we could. This led us to use a variety of media and a variety of processes, including automated software, photoshopping, photography, filming and others.
- Creation of the app. The content of the piece and the interaction between audience members takes place in a custom-built chat app that Joe McAlister created specifically for this piece.
- User testing of a prototype version. We initially tested the piece in a prototype version in a compressed form over the course of a single day with a group of people, giving each day's evidence at hourly intervals, with the chat opening half an hour later. We then gathered feedback from each participant first individually and then as a group.
- Narrative re-ordering and evidence adjustment in light of feedback from the prototype
- Adjustments to the app implementing feedback received to make it more user-friendly
- User testing of a second prototype version. This phase of user testing took place over 5 days and ran as it would in the final piece. Two separate groups played and we gathered feedback from each participant after the test.
- Narrative re-ordering and evidence adjustment in light of feedback from the prototype.
- Adjustments to the app implementing feedback received to make it more user-friendly.

In addition to these artistic processes, Dr Tom Blount and Joe McAlister embarked on an experiment design and Joe added features to the custom-built chat app, allowing us to track:

- how long people look at different documents for and whether/ how often they return to them
- how people talk about the data evidence that they have found in their player group chats
- when people engage with the game, for how long, how this pans out over the five days

So, as well as being a gripping thriller, all the data collected on how people engage with data could be used by Dr Blount and his team for research.

IV. CO-CREATION PROCESS

As the technology partner, Data Stories felt that it was important that Fast Familiar were able to lead the creative direction of the project without imposing restrictions on their artistic freedom that would limit their workflow or ultimate vision of the art piece. The primary resource that they as the tech-partner contributed to the project was the time (and expertise) of a research fellow (Dr Tom Blount). As such, while they remained on-hand to provide technical support and design suggestions on an "as needed" basis, as well as creating and providing synthetic data modelled on the real world, they focused on taking part during the initial testing of the artistic prototype and design suggestions with respect to experimental methodology for future research.

Fast Familiar's main contribution to the process was the time and expertise of artists Rachel Briscoe, Joe McAlister and Dan Barnard. They created the artwork through a process of ideation, iteration and software and app development. The piece takes

place through an app that is downloaded on to a smartphone from the App Store or Google Play Store. Fast Familiar also managed the administrative elements of the project, liaising with Dr Tom Blount from Data Stories.

V. IMPACT

A. Research Impact

This residency has had a key impact on the research undertaken by the Data Stories project and will form the basis of an on-going research investigation. There are two main research directions that this work has facilitated. Firstly, the creation process itself; by examining the frameworks that support the design process, and how scientists and the research community can work together with artists and technologists to bring examples of their research to members of the public and spread awareness of, and engagement with, important topics and resources. We intend to conduct a thorough "post-mortem" of this project in conjunction with Fast Familiar to learn how future projects and collaborations in this space can be informed by the process undertaken during this residency. The second research area this project has had an impact on is the way in which the public consume and engage with the artwork itself; we intend to use the large-scale roll-out of the *Smoking Gun* project to explore in what ways the public engaged with the art-piece. To achieve this, we will (again, with the support of Fast Familiar) invite participants that have experienced the *Smoking Gun* story to complete a short survey (and possible follow-up interview) investigating their overall experience of the piece, how able they were to solve the data "puzzles" in the story, their experience of collaborating with strangers, and whether the story changed or informed their perception of data and their own data privacy.

B. Artistic Impact

Smoking Gun is a new type of artwork, sitting at the intersection of interactive performance, game and puzzle. The artists involved in the project have a track record of creating ground-breaking new artistic forms, using new technology to enable a more intensely interactive form of performance than had previously been possible. For more information about this, see 'The Justice Syndicate: Using iPads to increase the intensity of participation, conduct agency and encourage flow in live interactive performance.'¹ Our previous pieces in this vein involved a co-located audience over a compressed time frame; *Smoking Gun* is our first experiment with a non-co-located audience over an extended time frame. This is an innovation within the field of drama and performance that has not been attempted before, to the best of our knowledge. Feedback from the prototype performances suggest that it is a highly engaging new artform.

Joe McAlister's modular approach to software and technology design means that the platform that we have built for this piece can be used to create new artworks that have a similar format i.e. in which players are sent different types of media (documents, video, photographs etc) and discuss it in groups. We have already received suggestions of how this format could be used to tell other stories or be developed into training tools for journalists and others.

VI. ART-SCIENCE INTER-RELATIONSHIPS

As can be seen from the Methodology and Co-Creation sections above, the collaboration and the process of learning from each other led the project in rich and surprising directions that neither partner could have anticipated. We were delighted to work in collaboration with each other this way. Through the use of incorporating synthetic multimedia data, puzzle-solving, and multi-user collaboration, the *Smoking Gun* project has served to highlight not only the interplay and interactions between people and data, but at a very fundamental level, between art and technology.

Over the course of the project, together we discovered certain principles of collaboration, which we found useful in their application:

- Respecting each other's expertise and roles. This allowed us each to focus on what they were best at and to learn from each other but also to trust each other and also to give each other space to develop elements independently
- Empowering each other to ask when we did not understand, creating a rule of "no question is a stupid question" to overcome the shame around asking for clarification, asking follow-up questions, not understanding jargon or ascribing different meaning to the same words
- An unexpected artistic benefit of having a scientific partner is that they can provide a fresh perspective on the developing artwork when they come in and see a new phase of development, noticing things that the artists may have missed through being too close to the development process and potentially being "unable to see the wood for the trees."

¹ 'The Justice Syndicate: Using iPads to increase the intensity of participation, conduct agency and encourage flow in live interactive performance' (2020) Barnard, D, De Meyer, K; *International Journal of Performance Arts and Digital Media* 16:1 68-87

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

VII. FUTURE DIRECTION AND ACTIONS

Data Stories have found this residency to be an extremely useful collaboration and are looking forward to the possibility of collaborating with Fast Familiar in future. In particular, we would be interested to use the *Smoking Gun* platform as a framework for telling yet more stories about data, to investigate how people collaborate in different problem-spaces. By re-using the existing *Smoking Gun* framework, we would like to explore additional stories covering new topics including data privacy, targeted advertisements, and "fake news", as well as (if feasible) exploring the depth of communication methods available to participants.

Fast Familiar are planning to release the piece to a wider audience in spring/summer 2020. They are currently making some adjustments to allow more people to play it at the same time and to add in various security features.

VIII. CONCLUSION

A. Concluding Remarks

The residency allowed us to create a new type of interactive performance taking place over several days and involving a non-co-located audience. Through this process we created a platform which could be used to create other artworks or training tools which take a similar form. The *Smoking Gun* platform has also provided a valuable framework for conducting large-scale experimental research on human-data interaction and collaborative data communication. Through the residency we also arrived at some useful principles for arts/science collaborations, including:

- Respecting each other's expertise and roles. A proposed strategy for ensuring this could be to clearly define roles and responsibilities at the start of a collaboration and putting faith in each other, relinquishing the need to feel in control of a process.
- Empowering each other to ask when we did not understand, creating a rule of "no question is a stupid question." Often we can either feel embarrassed at not understanding something ourselves or we can fail to explain things fully for fear of patronising something else. This rule can remove a barrier by making everyone feel comfortable about being able to ask questions.
- A scientific partner can play a valuable extra role by providing a fresh perspective on the developing artwork when they come in and see a new phase of development, noticing things that the artists may have missed through being too close to the development process. In order for this not to clash with the first principle of respecting each other's expertise and roles, the artists could frame the questions that they would specifically like feedback about, in a process that could draw on Liz Lerman's Critical Response Process.²

² 'Critical Response Process' L Lerman, J Borstel - Takoma Park, MD: Liz Lerman Dance Exchange, 2003