

# Imagining Citizens as More than Data Subjects: A Methodography of a Collaborative Design Workshop on Co-producing Official Statistics

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## Abstract

The article presents a methodography of a collaborative design workshop conducted with national and international statisticians. The workshop was part of an ethnographic research project on innovation in European official statistics. It aimed to bring academic researchers and statisticians together to collaborate on the design of app prototypes that imagine citizens as co-producers of official statistics rather than only data subjects. However, the objective was not to settle on an end product but to see if relations to citizens could be re-imagined. Through a methodography composed of two ethnographic narratives, we analyse whether and how a collaborative design workshop brought about imaginings of citizens as co-producers. To retrospectively analyse the workshop, we draw on feminist and material-semiotic takes on 'friction' as characteristic of collaboration. 'Friction', we suggest, can enlarge the repertoire of collaborative speculative practice beyond notions of rupture or consensus. Finally, we suggest that this analysis demonstrates the potential of methodography for opening up and reflecting on method in STS through eliciting the possibilities of collaboration.

**Keywords:** co-production; ethnography; methodography; citizen data; official statistics; big data

## Introduction

The collaborative design workshop central to this article followed over three years of work on a project broadly concerned with the practical and political implications of new digital technologies and big data sources for official population statistics. As part of a team of six researchers, we ethnographically followed the data practices of EU national and international statisticians as they experimented with new digital technolo-

gies and big data sources, such as sensors, smartphones, search engines and social media.<sup>1</sup> During our fieldwork, we became interested in how we might envision different futures for official statistics in a collaborative workshop with statisticians. This interest arose as a result of our critiques of National Statistical Institute (NSI) experiments with digital technologies and big data that imagine people as data subjects rather than as data



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citizens who are active participants in the making of data and statistics (we elaborate the meaning of this below).

In this article we retrospectively examine this collaborative workshop. The workshop was attended by academic researchers from different backgrounds, statisticians, and designers. We are particularly interested in the workshop as a method for imagining together. Imaginings are partly the outcomes of the methods we employ (in this case a workshop). Consequently, how a workshop is conceptualised, who participates and how it is practically set up to facilitate collaboration can make a difference for the futures we envision. So how did this collaboration work in practice? This is the question we attend to below by investigating whether and how the collaborative design workshop could bring about imaginings of citizens as co-producers of official statistics.

Our retrospective examination draws from a type of study that Christian Greiffenhagen, Michael Mair and Wes Sharrock refer to as a 'methodography': an "empirical study of research methods in practice" (Greiffenhagen et al., 2011: 94). The concern of methodographies, the authors propose, is to ethnographically study social scientists in their working environments in the same ways as scientists from other disciplines have been studied in laboratories and other sites of scientific and technical practice. This is relevant for addressing how methods are enacted in social science research, and the politics around such enactments. For instance, Greiffenhagen et al. compared the everyday work of qualitative and quantitative social science research groups to demonstrate the shared modes of reasoning that bind rather than divide these research approaches. Their study thus makes an intervention in a social science field that is largely structured around the qualitative-quantitative divide. We take up the concept along these lines: methodography can be considered as part of a large body of concepts and methods to study science in practice. For us, the significance of the concept is not to set it apart as a distinct practice. Nor do we consider it as a programme to evaluate social science research. Rather, we interpret it as a sensibility to engage with social science research in a descriptive and analytical mode and a concern for method development.

In the context of this special issue on ethnographic data generation in STS collaborations (Lippert and Mewes, 2021), we mobilise the concept of methodography to investigate in some detail the operation of a particular kind of collaboration: collaboration in speculative research. In speculative research the aim is to imagine and speculate on possible futures beyond "the impasse of the present" (Stengers, 2010; Wilkie et al., 2017: 2). For social science methods this means applying modes of thought and research techniques that attempt to take part in constituting ideas and practices about the "yet-to-come", not by orienting to the present, but by taking new possibilities seriously (Wilkie et al., 2017: 4). The workshop we describe in this article is of interest to this type of research because of its intention to imagine different futures for official statistics through a practical and material engagement with design. It was structured around prototyping a "citizen data app" that would enable citizens to actively participate in the generation and analysis of statistical data. However, the workshop was not set up to produce a ready-made app, but to collaboratively speculate on the state-citizen relations that technologies can mediate.

Based on the two ethnographic narratives that make up our methodography, we conclude that the workshop brought about imaginings about citizens as co-producers of official statistics by way of 'friction'. Drawing on the work of Marisol de la Cadena, Anna Tsing, Helen Verran and others we develop a relational notion of friction to highlight that it is through the formation of 'partial connections' between imaginings of different participants that new ideas about the future can emerge (Strathern, 2005). This analysis contributes an additional vocabulary to "a catalogue of speculative practice" (Guggenheim et al., 2017: 148). While "rupture" is often used as an analytic for understanding speculative research, it does not cover the dynamics that occur in speculative methods with a collaborative dimension. Yet consensus or sameness, concepts that are often used to characterise successful collaboration, also do not apply to the events in the workshop (cf. Mouffe, 2009). "Friction" may therefore be helpful for reflecting on and developing speculative methods.

The first part of the paper details the background to the conception and execution of the workshop. It demonstrates how the concepts of collaboration, experimentalism and design helped to frame the workshop. It furthermore defines the notion of citizen co-production that we made central to re-imagining citizens as co-producers of statistical data. This section should therefore not be read as a theory section underlying our analysis of the workshop but as the background to the method we developed (the workshop). We elaborate on this, firstly, because it supports the analysis of the workshop-in-practice. Second, it can be informative for readers interested in working and experimenting at the intersections of data and citizenship.

Next, we elaborate on how we conducted our methodography and how we inductively developed our notion of friction as part of this collaborative and speculative practice. While most of the paper is dedicated to this methodography, in the conclusion we reflect on one possible role of methodography in STS. In our case, we suggest that conducting a methodography helped to retrospectively explore difference, not by erasing it, but by opening up stories of discordance and apparent miscommunication and learning to understand them as frictions (De la Cadena, 2015; Viveiros de Castro, 2004). Through this process of retrospection, opening up, and creating narratives, methodographies can support method development in STS and help researchers reflect on their position in a collaboration. In our case, this position concerned how to work with inevitable differences in worldviews and interests concerning the role of citizens in official statistics.

## **Conceptualising and organising the workshop**

### ***A workshop on designing a citizen data app***

As noted in the introduction, the idea for the workshop followed from critiques we developed during our ethnography of the production of official statistics regarding assumptions about the subjects of statistical methods.<sup>2</sup> One critique we developed concerned how statisticians focus on securing privacy, confidentiality and data protection rights in ways that position citizens as passive

respondents or data subjects who need protection, or whose impressions and confidence need to be managed. A related critique was what we identified as a growing gap between citizens' actions that are part of the production of big data, the interpretation of that data for statistics, and citizens' roles in the production of and then identification with the results (cf. Ruppert et al., 2018). This issue is especially applicable to data generated by people's actions, interactions and transactions on digital platforms. Unlike long established methods of data collection such as surveys and questionnaires, methods of repurposing data generated by social media, mobile phones and browsers constitute various forms of increasing detachment: between citizens and states; and between citizens' actions, identifications and experiences and how they are categorised, included and excluded in statistics.

In developing the workshop, one objective was to attempt to move beyond the tradition of critique; i.e. opening up the 'black boxes' of situated practices to account for the techniques, materials and actors that make statistics by revealing their values, normativities and politics. Our intention was not only to make statistics a subject of critique but to think speculatively on what statistics might be. In particular, we wanted to think with others about the roles and interests of citizens in the production of data for official statistics, including those whose interests are usually not made present (Latour, 2004; Puig de la Bellacasa, 2017; Wilkie et al., 2017). To reposition our relation to our object of research (the making of data for official statistics) and our research subjects (statisticians), we began to think about how we might 'stage' an encounter between their experiments and our critiques. In other words, how might we devise a situation that could be productive of different ways of conceiving of the role of citizens that neither we as academic researchers nor they as statisticians alone could have imagined?

The method we settled on was an exploration of citizen involvement in official statistics through the design of a thing we named a citizen data app. While naming it as such we left its meaning open to the design process, which involved a series of workshop activities co-developed and assisted

by a non-profit organisation specialised in social innovation, which we will refer to as Inov. In brief, we divided participants into four break-out groups of about six people assigned with the task to develop a prototype for a citizen data app by following a series of exercises. The first activity sought to take participants out of their “comfort zones” by considering themselves as citizens in relation to data that is collected daily about them; in this way, conceptions of citizen rights in relation to data were made reflexively and experimentally present. Following this, groups were asked to define a set of design principles (e.g. inclusivity), then design a prototype based on these and finally develop a roadmap for implementation.

### ***Collaboration, experimentalism and design***

Our approach, which we communicated to our workshop participants through background documents and a working paper, was based on three concepts: collaboration, experimentalism and design. Together, these related concepts helped to develop the rationale for a design workshop based on established STS concepts that could be effectively communicated to professionals from other fields of practice (cf. Ruppert et al., 2018). We discuss them here to offer an insight into how the collaboration was conceived.

First, we drew on approaches at the “interfaces” between anthropology and STS (De la Cadena et al., 2015) to develop a form of collaboration. Collaboration with professionals from other fields has been conceived by some as intrinsic to ethnographies of science and applied research (e.g., research in the natural sciences, statistics, or policy research) because conducting such studies can imply working with research subjects who are equally interested in, and capable of, reflecting on their field (Fischer, 2009; Savage, 2010). In addition, field access increasingly relies on collaboration, and many funders now include collaboration with third parties as a requirement. On the one hand, this has led to concerns about the capacity of researchers to produce insights on their own terms, and for their own disciplines (Faubion and Marcus, 2009). On the other hand, it has resulted in inventive ethnographic repertoires, for instance, the uptake of collaboration as epistemic partnerships with research subjects

(Deeb and Marcus, 2011: 51; Estalella and Sánchez Criado, 2018).

The notion of collaboration underlying this workshop was particularly concerned with the generative potential of collaboration that follows from Anthony Stavrianakis’ (2015) observation that a “collaboration is one in which two kinds of participants, in their engagement, are able to name a problem or do a practice that in their position as participants (prior to engagement) they would not have been able to do” (Stavrianakis, 2015: 171; cf. Rabinow and Bennet, 2012). For us, collaboration meant reformulating settled problem definitions and reflexively engaging in the ongoing co-production of worlds (Waterton and Tsouvalis, 2015). As Michel Callon et al. phrase it, “through trial and error and progressive reconfiguration of problems and identities” such forums are “not only reacting but reconstructing” (Callon et al., 2011: 35; Latour, 2006).

We referred to the workshop not as an event to produce a ready-made app, but as an opportunity to imagine and try out different futures. It was in this sense that we referred to the workshop as an experiment, our second core concept. We drew on the concept of experimentalism as a method and mode of opening up STS research to a wider range of participants (in this case primarily statisticians) (Lezaun et al., 2017). This is not new; various strands of social science have operated with degrees of experimentalism to this end (Gross and Krohn, 2005; Guggenheim, 2012). One reason to adopt experimentalism is to achieve a degree of democratisation by broadening scientific and technical debates and processes (or rather: transform technical issues into public issues, and generate publics (Marres, 2012)). The second, which is the reasoning we drew on, is to develop and explore new problem formulations, transcend ingrained styles of reasoning, disrupt existing hierarchies and critically examine how objects of study come into being and what they exclude (Rabinow and Bennett, 2012; Ruppert et al., 2015). In this model of a “collaboratory” participants from different expert backgrounds engage in “concept work” through the common exploration of an issue.

We also proposed ‘experimentalism’ as a work mode to the workshop participants. Rather than

the controlled and scripted procedures of a closed laboratory, we conceived the workshop as an exploratory, trial-and-error format that would accept uncertainty about the outcomes and stay clear from a language of absolute success or failure. Our general intention was to remain open to surprises, whether positive or negative, and enable subjects of our research (i.e., statisticians) to answer back and challenge our framings, interpretations and assumptions. At the same time, we proposed that our experimentation be 'care-full' (Grommé, 2015; Puig de la Bellacasa, 2017), not in terms of strict protocols, but in terms of care and caution as part of risk-taking (Latour, 2006). Ideally, this would involve monitoring and documenting who and what are (unavoidably) in – and excluded; avoiding ambiguity about our terms of evaluation (when do we think something is 'good enough?'); avoiding attributing failure solely to perceived local circumstances; avoiding separating normative elements from scientific fact (Latour, 2006); and producing adequate documentation.

Finally, the third concept we adopted is that of design, by which we mean, paraphrasing Ton Otto and Rachel Charlotte Smith (2013), a process of thought and planning that gives structure to an idea. Designing is a mode of working that is future oriented, aims at intervention, and often involves collaboration (Otto and Smith, 2013). Prototyping, the materialisation of an idea through drawing, making mock-ups, building test sites and more, has become a mode of working at the interface of design, STS and anthropology. Making and testing prototypes helps to attend to the socio-material realignments, and new realities and relationships that can unfold around a new plan or artefact. Our uptake of design practice drew on Binder et al.'s notion of 'thinging'; a form of prototyping that explicitly distances itself from design processes that focus on an end product in ways that obscure how entangled humans and artefacts shape our modes of living (Binder et al., 2015: 154).<sup>3</sup> Instead, thinging is a form of collaboration that aspires to exploring matters of democracy and power. In the words of Janet Vertesi et al., designing together would help to suggest "alternative visions and distributions of power and agency" (Vertesi et al., 2017: 177). Ideally, such issues can be made

"experimentally available to such an extent that 'the possible' becomes tangible, formable, and within reach" (Binder et al., 2015: 163; cf. Jungnickel, 2017).

In sum, we drew on the concepts of collaboration, experimentalism and design to conceive of the workshop, and communicate its background to the participants. A workshop involving the design of a thing was a way of exploring different futures together through creative practices. In the next section we will further elaborate on this speculative mode of working. However, we first briefly elaborate on the understanding of co-production that we proposed to the workshop participants.

### ***Imagining citizens as co-producers of data***

Building from our critique of the conception of data subjects, we took as a starting point how the dynamic, performative and interactive possibilities of digital technologies have the potential to imagine subjects as active agents in the production of data. How might digital technologies not only produce big data but also provide opportunities to forge new relations between researchers and the researched? Our proposition was that digital technologies make it possible to imagine subjects and their relations to the state in new ways. Rather than conceiving of digital technologies as only allowing for surveillance and control, as they are often talked about, we proposed exploring how they can also enable subjects to exercise rights to be active *co-producers* of data (Ruppert et al., 2019).

Our initial conception of co-production was informed by three understandings. First, we drew on citizen science and civic media initiatives where people are active in the making of different data to that generated by science or the state.<sup>4</sup> However, rather than considering citizens as only capable of generating parallel alternatives as conceived in some versions of citizen science, we considered co-production as a way to break from established approaches of official statistics and imagine a different future somewhere between citizen science and statistical science. Second, and drawing from critical citizenship studies, we understood that being a citizen means having the right to make claims and demands about how data are made about them and the societies

of which they are a part (Isin and Ruppert, 2020). Third, following how co-production is understood in STS, we considered co-production as not only a relation between human actors but also with materials, technologies, things, imaginaries, and conventions (Jasanoff, 2016).

### **Analysing the workshop: a methodography**

Having outlined the background to the workshop, we return to the question we posed in the introduction: how did this collaborative design workshop bring about imaginings of citizens as co-producers? Answering this question, we hope, can contribute to speculative research in STS. Although many different interpretations of speculative research are possible, often it engages with employing inventive methodologies or concepts to conceive of futures that question or intervene with common conceptions of progress. In Isabelle Stengers' words, speculation is to stop carrying on "as if the future had to manage itself" (Stengers, 2018: 135), that is, to accept a notion of the future as path dependent. Obvious and relevant preoccupations of speculative research are social inequality and ecological disaster, but more variations exist. Examples are an experiment with narrating disasters and their responses in a sandbox, or the use of Twitter bots to provoke conversations about the future of energy usage (Guggenheim et al., 2017; Wilkie and Plummer-Fernandez, 2015). In our (rather modest and small-scale) uptake of a speculative sensibility, our preoccupation was the future of citizen participation in increasingly data-intensive modes of government.

One suggestion, often of a prescriptive nature, is that speculation should occur according to a logic of "rupture": through "eruptions of the possible" (Wilkie et al., 2017: 7). An underlying rationale is that without rupture, nothing new can occur: we would be talking about "business as usual" in which newly imagined futures would follow the "logics, rationalities and habits that govern the problematics of the present" (Wilkie et al., 2017: 1). Instead, we should take the impossible seriously and look for different temporalities of emergence. However, such calls have "been almost silent about how speculation works" in

practice (Guggenheim et al., 2017: 148). In fact, calls for speculation often ignore that, in many settings, thinking and imagining is situated. In our case of collaboration, especially, it is relevant to understand how the involvement of "stakeholders" (in our case statisticians) affects how we conceive of the future. Even though a collaborative workshop may not be attuned to imagining the impossible, implausible, or unthinkable, it may invoke a different dynamic of speculation. Instead of presenting an unthinkable proposition, our proposition for citizen co-production in the field of official statistics, was recognisable for our collaborators because statistical agencies have historically engaged 'citizen scientists' as data collectors. However, involving citizens as active co-producers was certainly a more radical and unrealistic proposition for most participating statisticians.

We suggest that 'friction' is another dynamic through which speculative research can take place. In collaborative efforts to imagine different futures, it may be inevitable that different realities and constraints become part of thinking together (in the next section we will show how this happened for our workshop with regard to thinking outside existing practices of official statistics). In this sense, rupture as described above may not be attainable. We suggest that friction is another dynamic where the objects of collaboration between actors are not necessarily aligned but nevertheless generative (Tsing, 2004).

We came to this idea by an inductive, thematic analysis (Boyatzis, 1995) of our ethnographic notes of the workshop, through which confusion, friction and uneasiness emerged as relevant themes. For instance, characterizing our field notes were statements such as "it is not working", "we disagree", but also "the information is sinking in" and "we settle on". In short, retrospective analysis suggested a type of friction in terms of a "committed struggle". Because these are familiar themes of collaborative and experimental processes (De la Cadena, 2015; Gaspar, 2018; Guggenheim et al., 2017; Moats, 2021; Stavrianakis, 2015; Tsing, 2004), we continued our analysis by focusing on empirical moments where such frictions occurred. This methodography furthermore came about by moving back-and-forth between empirical moments of friction

in our data and concepts in the literature, and through narrating workshop events (cf. Jensen, 2021). It is through this narration that we came to develop a concept of friction that did not prefigure observation but emerged in relation to the practices we observed and how we came to write about them.

Below, we describe how we came to understand the different ways in which friction operated. Informing our understanding are material-semiotic and feminist STS-inspired accounts of collaboration, including Marisol de la Cadena's account of a collaborative book project with her Andean co-labourer Nazario, Helen Verran's work on collaboration between environmental scientists and Aborigine landowners in Australia and Anna Tsing's research about collaborations between activists, NGOs, corporations and governments. One important starting point that these accounts illuminate is that collaboration does not imply mutual understanding in terms of finding a middle way between divergent perspectives on the same future. Rather connections between different imaginings are always partial: they may be connected, but not added up or merged because they emerge from different relations between the actors and their imagined futures (Strathern, 2005).

By connecting with this work here we do not mean to argue that our case of a collaborative design workshop is directly comparable. De la Cadena's work, for instance, is about actors inhabiting very different worlds or "relational regimes" with the earth (De la Cadena, 2015: 213). However, while frictions may become "superobjectified in the extreme case of so-called interethnic or intercultural relations", they are also "conditions of every social relation" (Viveiros de Castro, 2004: 10). In this article, we further explore this possibility.

We present two ethnographic narratives of emerging imaginings, and how these were characterised by friction in different ways. Each of the narratives presents the observations, interests and lessons drawn by the individual authors, and we largely preserved the differences in style and analysis. At the same time, they are entangled because they follow ethnographic research conducted in a shared field, including several years of conversations leading up to this article

(Scheel et al., 2019). Rather than collapsing the two ethnographies into one, we have chosen to present them individually to preserve the richness and integrity of our experiences of friction and the discordances underlying them. Smoothing out these narratives would essentially remove our sensibility to friction. In the following we start with a narrative about how 'feedback' emerged as one of the enactments of co-production during the workshop. This section develops and highlights friction as 'equivocation' (De la Cadena, 2015; Viveiros de Castro, 2004). Next, we narrate friction as a shared space of sameness and difference (Verran, 1998).

### Friction as equivocation (Francisca)

After the participants had arrived at a bright workshop space in a South London library, the event started with several presentations and introductory exercises. Anyone who has ever attended design-inspired workshops will be familiar with their dynamics. We were expected to stay active, keep up the pace, to focus on potential rather than on barriers, to produce quick results, to share and design rather than to contemplate problems individually, to be "punchy" and to commit to our ideas.

Inov's guidance in this process proved effective in getting the break-out group I was part of to come up with and commit to a number of 'design principles' we would value in an app, for instance, protecting vulnerable citizens and experimentality. Yet, when it came to developing and agreeing on a "concept", we progressed slowly and laboriously. We referred to "the concept" as the central idea for the citizen data app, for instance, an app that collects data on consumer retail prices. The resulting concept would need to be visualised using materials such as a flip-over sheet with text fields, an outline of a phone screen and stickers representing different parts of an app interface.

The group members floated various ideas, among which a budgeting app and a time-use app. However, in the words of the Inov moderators, no-one (including myself) was prepared to "take ownership". Practically, this not only meant to settle on an idea and assume responsibility and

leadership, but also to take initiative to draw it on a sheet of paper. A defining moment was, however, when one of the participants, a statistician, pulled a receipt from his wallet. He asked: what if people could record their receipts easily using their smartphones? We taped the receipt on a sheet of paper and started from there.

The concept we agreed on revolved around the Consumer Price Index (CPI), a routinely published and well-known statistic that serves as the basis of inflation measurements. Our idea was to have citizens scan their receipts to record the prices of their groceries (see Figure 1). Normally, the CPI is based on labour intensive diaries and surveys to determine which goods and services residents need to sustain themselves, including rent, groceries, memberships, and so on (the 'basket'). Each of these goods and services needs to be assigned a weight (the percentage of the total spending), so the effects of price changes can be determined. If citizens were able to photograph or scan receipts, we reasoned, data collection would be less work intensive. For some products, pop-ups

could be used to ask additional questions about the purchased goods. In return, and this was the design principle we applied most, the NSIs could give citizens *feedback* on where to shop for the lowest prices, budgeting, their carbon footprint, or healthier products.

The receipt was relevant because it helped to imagine citizens like ourselves doing common routines of shopping, comparing supermarkets, neighbourhoods, and products. However, as an organiser-participant, I was not satisfied with the notion of co-production emerging with this design.

Upon coming home from day one, I was still thinking about the workshop. I was at the same time relieved that we came up with a concept and dissatisfied with how our designs imagined citizens. Citizens were not included as co-producers, but as consumers and data collectors. Furthermore, some group members had argued that statisticians could not take the needs of economically vulnerable groups into consideration because their small size would cause sampling issues. The 'feedback

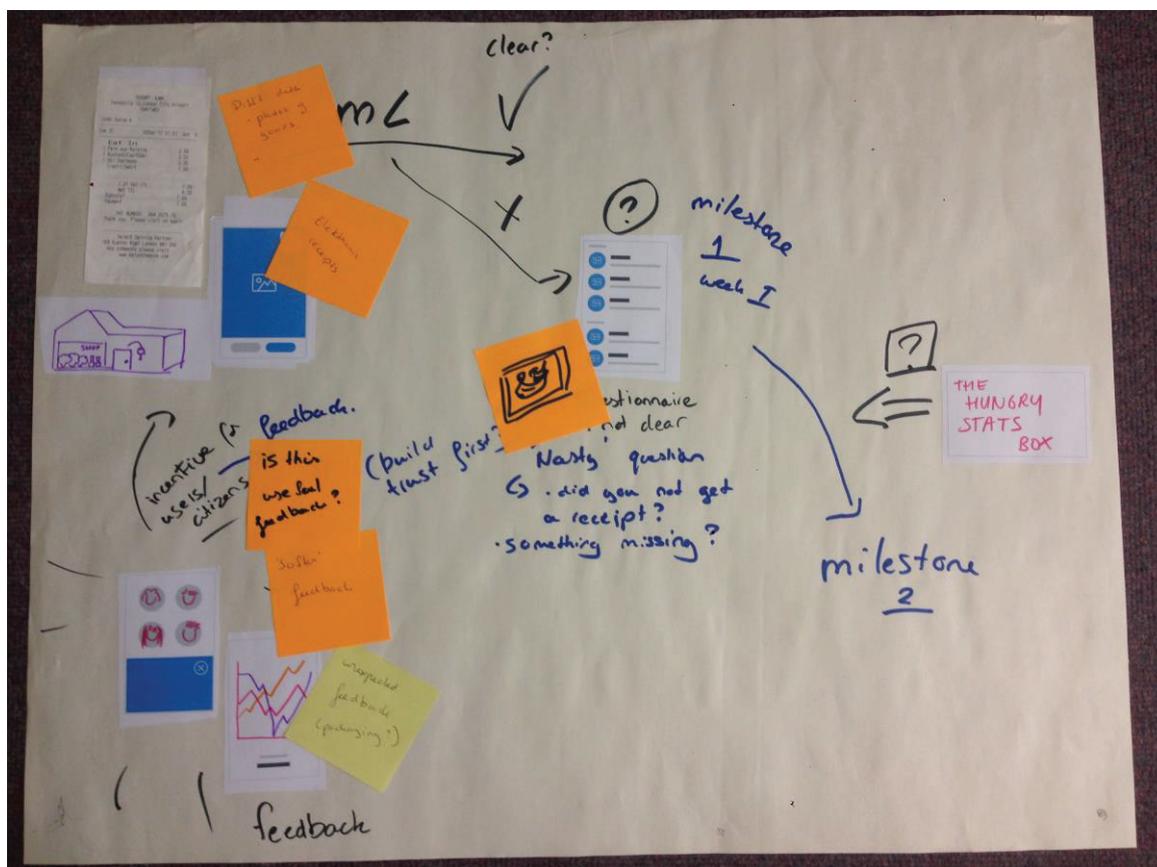


Figure 1. Prototyping citizen data app to complement the CPI (receipt in the upper left corner)

mechanism for advising citizens on their lifestyle or consumption patterns, moreover, risked patronising citizens instead of empowering them, or so I thought. I did some quick research into critiques of the CPI and came up with the following question: what if citizens could influence the weighting of the goods?

I introduced these ideas on day two, when we continued to work in the same groups. Our first assignment was to review our concepts. Having resolved to push the notion of co-production further, I initiated the following conversation:

F: My question is whether other features can be integrated? First, all responsibility for changing consumption patterns and diminishing people's environmental footprints is placed on the citizen or resident. Second, there have been criticisms on the weighting of categories within the statistical community as well. Perhaps citizens can give feedback on this? Or perhaps they can provide feedback on the categories, and suggest alternatives? I would like to see if we can extend our ideas of co-production from participation in data production to also being involved in other parts of the statistical process.

Statistician S: [resolutely] this is not possible. The categories and definitions used are part of international regulations and systems. It is impossible to change these.

"International regulation and systems" refer to guidelines and agreements developed and endorsed by international statistical organisations such as Eurostat and the United Nations Economic Commission for Europe (UNECE). Regarding the CPI these include, for instance, twelve main categories of consumption (e.g., health and transport) and guidelines about whether to include goods and services purchased abroad. For many statisticians, 'objectivity' (an important value in official statistics) resides in following these guidelines. Statisticians will often agree that all methods influence how data are produced, so objectivity is sought in standardisation and harmonisation.

Looking back, however, more seems to be happening that is of interest to understanding the possibilities of imagining together. The conversation above was not the only moment when it became clear in my group that co-production

would not be imagined as involving citizens in the collection and analysis of data. Statisticians consistently imagined citizens as respondents or users that would take and upload photographs, answer pop-up questions, and more. To return to the quote about international regulations and systems, this seems a puzzling response because, firstly, why would regulations stop one from *imagining*? And why did they travel all the way to the workshop? Did they misunderstand or simply disagree with the workshop's aims? These factors may have played a role, but the time and energy that they and the other participants invested in the exercises suggest that something more was happening.

It seems that underlying these frictions were not only existing methods and standards as defined in regulations but also what Marisol de la Cadena (2015) refers to as unresolvable differences between "co-labourers" from different social worlds, or what Viveiro de Castros refers to as equivocations: "a failure to understand that understandings are necessarily not the same, and that they are not related to imaginary ways of "seeing the world" but to the real worlds that are being seen" (Viveiro de Castros, 2004: 11). Here the 'real world' refers to a difference in how the term 'respondent' is rooted in our, the organisers', practices, and in those of the statisticians. As organisers, we attempted to imagine citizens as more than respondents: as people that claim the right to participate in the production of data about them. However, for statisticians, 'responding', or making oneself legible through the methods of the state (e.g. interviews or scanning your receipts) was *also* a form of citizenship. Responding to the state is exactly what makes them citizens, and what gives people the capacities to receive rights and benefits. In our group, respondents or users were imagined as people to be enrolled in data collection in transactional ways: through "stick-and carrot strategies" or "rewards" such as statistics about their peer group. It is this 'partial connection' around respondents that made collaboration both possible and frustrated it. This is to say that these enactments of citizen-state relations did not so much result from divergent perspectives that could be brought together conceptually in a single, hybrid perspective. Rather, they exist

as situated ways of doing citizenship that can be connected but cannot be added up to realise an overarching form of citizenship (Strathern, 2005).

In relation to the 'transactional' notion of citizen-state relations, feedback was considered as an almost self-evident form of co-production by various members in my break-out group. This was also evident as we further developed our ideas about feedback in one of the final exercises: the creation of a "roadmap" (see Figure 2). The roadmap was to identify relevant steps and milestones in realising the app, such as acquiring support and funding. A few of the groups drew a roundabout, as did mine.

One of the statisticians in my group argues that the roundabout can represent the design principle of 'experimentality' that we defined on day one. Experimentality, the person argues, 'is where co-production is'. We continued drawing our roadmap, added 'users' and programmers, but I start wondering whether we are not just reproducing our concept. I mention that our drawing does not really seem to represent 'steps' or

a process. Co-production is part of the concept – it is not a step. Some agree with me, but most do not, "it can work like this"; someone says about the current roadmap.

Co-production, as citizen feedback on the design of the app, thus became part of the roadmap; it was used to refer to the process of app design and evaluation. At the time, I was convinced that co-production was being confused with the notion of experimentality. Only after the workshop did I realise that something new was generated out of these moments of friction: feedback would not only be part of the everyday operation of the app in the sense of 'advice'; citizens would also be involved in reviews of the app as users, for instance, to convey their preferences about the types of feedback they would receive ('feedback on the feedback'). While this understanding of citizens as 'app users' was not part of our initial conception of co-production, it does imagine a citizen-state relation that closely mirrors that between subjects and private sector apps. In this processual notion of feedback, citizens become

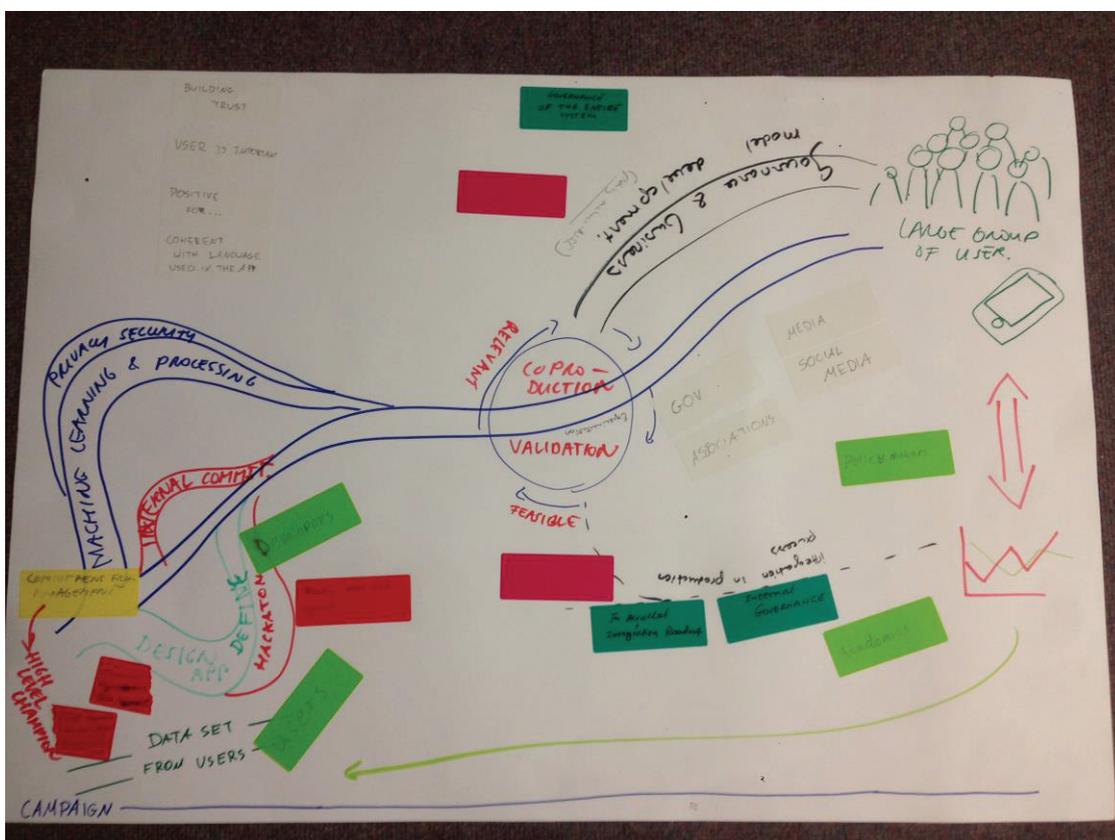


Figure 2. Roadmap for producing citizen data app to complement the CPI

part of reviewing and designing devices for data collection and how they are to be 'rewarded' for their data, similar to the bargain subjects make when using 'free' apps produced by the private sector.

To sum up, a state-citizen relation was imagined within the boundaries of current methods of producing statistics in which citizens are positioned mainly as data subjects; something we as organisers tried to reimagine through a speculative method. Yet something new also emerged through frictions: within these boundaries we

were able to imagine together how citizens could be part of decision-making on the design of an app. So, to paraphrase Anna Tsing (2004), while collaborations rarely line up that well, the workshop was generative. Friction, in this sense, was not a clash but seemed to operate through "the awkward, unequal, unstable and creative qualities of interconnection across difference" (Tsing, 2004: 4).

There are limitations to this analysis of equivocations and frictions, since by definition equivocations cannot be fully known or completely

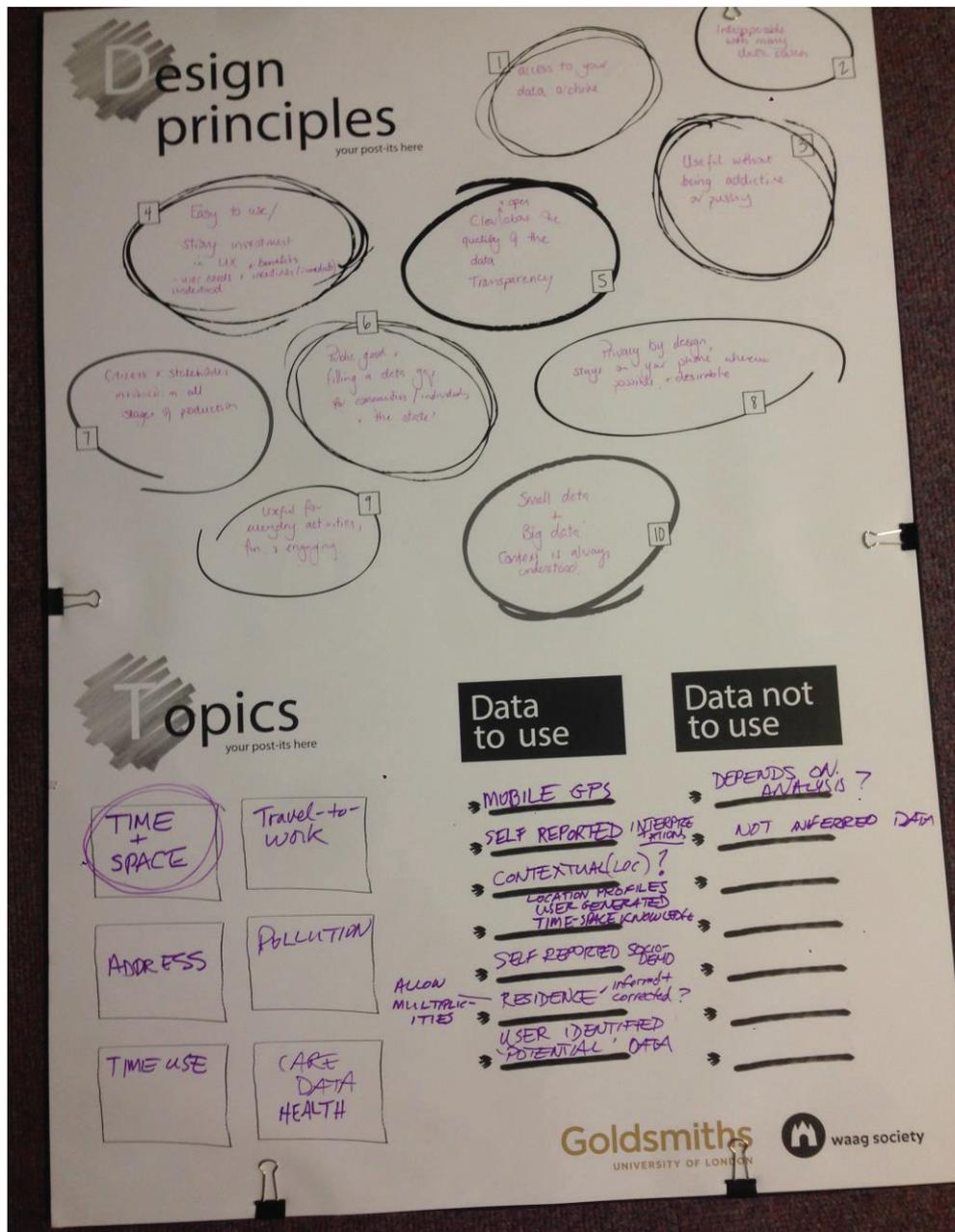


Figure 3. Brainstorming on design principles for the 'How we move' app

explained away (De la Cadena, 2015; Viveiros de Castro, 2004). Furthermore, there were very likely much more profound differences, as well as much more superficial ones, relevant to how this workshop played out. I was perhaps able to at least scratch the surface through designing together or 'thinging'. To draw figures and make mock-ups required a level of detailed engagement that highlights difference (which was perhaps a reason why few people volunteered – to avoid such tensions), and thereby provided more insight about how speculation becomes possible through friction.

To conclude, in this group imagining did not surpass the current possibilities and practices of official statistics. In the next section, we will further analyse how other possibilities for imagining were conceived by imagining 'complementary statistics' as a space alongside existing official statistics.

### **Frictions as doing difference (Evelyn)**

By insisting on the terms 'citizens' and 'co-production' in the organisation and set up of our workshop materials, we established in advance how we wanted to talk about and conceive of the subjects of an app. The power of words to shape imaginaries (Castoriadis, 1997) was evident in how this led to a change in terminology by the end of our second day together. Some statisticians started referring to citizens rather than respondents, and co-production rather than data collection. Though the meaning of these terms was not settled, through their uptake, this change in words contributed to imagining different citizen-state relations. Similarly, it was also relatively easy for my break-out group to come up with shared principles that this change implied such as ensuring an app met public values, that it would be easy to use, that the software would be open, that the data co-owned, and that consent and privacy would be built into its design (Figure 3).

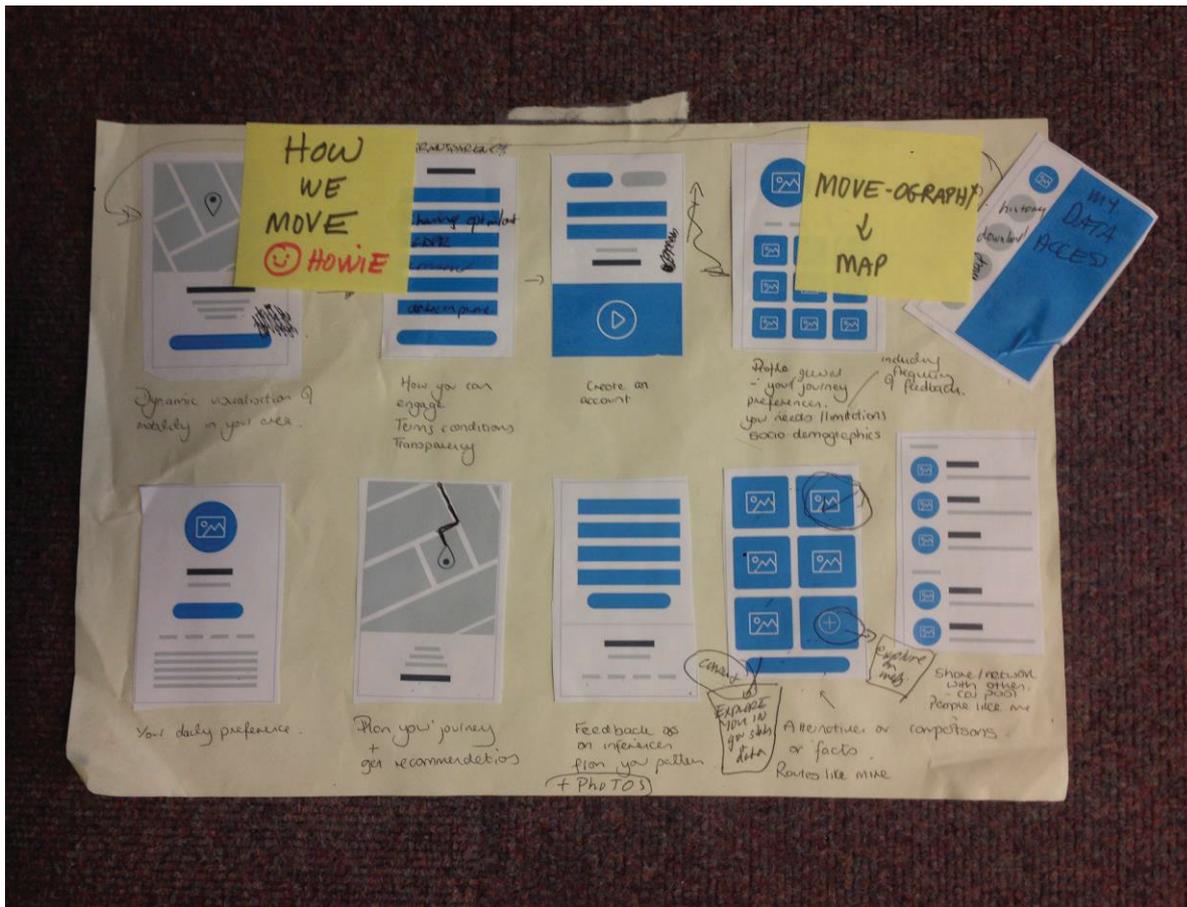
However, while words and principles shaped the imaginaries of the group, translating them into the design of a prototype for an app made visible differences that operate beyond language (Lippert and Douglas-Jones, 2019). Moving beyond words to working with materials, made differences visibly present but also the possibilities of "doing difference" together (Verran, 2002).

That is, rather than resolving ontological differences, as I came to realise, design opened the way to something new. This was evident in two frictions that emerged in relation to my group's conception of an app.

The first concerned how the group imagined an app called 'How we move' to explore the different meanings and relations of citizens to mobility that defy usual statistical categories of where people live and work. One proposition was that existing statistical categories about what is called a person's usual place of residence, journey to work, or other movement pattern do not capture the complexity of mobilities and meanings of residence in contemporary cultures.

We imagined how we could rethink these categories through an app that mixed automatically collected data such as GPS, along with citizens' annotations, interpretations, and categorisations of movement patterns. An interesting dynamic emerged whereby non-statisticians generally pushed the design in the direction of citizens intervening in the generation, modification, categorisation and interpretation of data while statisticians worried about quality and needing to control all of these data practices. (Figure 4)

Not a surprising finding perhaps but as one of the co-organisers, participants looked to me to guide the design process towards a resolution. I was also committed to facilitating a design that could resolve the friction between enabling citizen interventions in data and maintaining quality control over data. This created a tension between my role as participant and co-organiser with a particular commitment to the outcome of the workshop. Reflecting on this afterwards, I learned that Francisca had a similar experience. In her field notes she reflected on difficulties getting someone in her group to begin a task and how she often ended up guiding the group work. She started provoking the group lightly by "putting parts of their discussions on paper" and in this way get them to state their agreements or disagreements. Francisca reflected that this helped keep the group on topic and made it possible to move on. She also observed that this had the effect of getting the group to speak more speculatively, by showing them that something was not "set in stone" just because it was committed to paper as it



**Figure 4.** Prototyping the 'How we move' app

could always be modified. The other participating researcher, Funda reflected that the concept for an app that emerged from her group was the product of her and another person's "agenda" with others in the group not in agreement. She indicated in her notes that she felt uncomfortable for having "pushed" their understanding of a citizen data app. Funda speculated that it might have been better to develop a different version that reflected the interests of others in the group who, for example, imagined an app with less involvement of citizens in its design.

In a similar way, at times I insisted that my group stick to a task and engage with the principle of co-production, and at times I appealed to others in my group for support. While design made differences visible it also called for my interventions and sometimes insistence that differences not be resolved but enabled to co-exist. This commitment and sensibility thus contributed to how imagining something new emerged: that co-produced data could be based on different quality standards

yet generative of unique and perhaps previously unimagined kinds of statistics. This led to some statisticians suggesting that co-produced data could be treated as complementary rather than a replacement of official statistics, a term they often call forth when a new and unsanctioned statistic is generated. That is, relegating it to a special status was a strategy of both accepting co-production but retaining the authority to ascertain legitimacy. But for me, while not too surprising a move, it was also a way of acknowledging that different modes of producing statistics can be imagined as legitimate and official. That is, complementary data enabled making partial connections between an imaginary of co-production that enables citizen interventions in data and that of statisticians maintaining what they define as quality control over data.

Reflecting now on what I initially called a friction, rather than a compromise, the experiment generated something similar to what Verran (2002: 731) argues is a "sameness" alongside the

enactment of differences through which the “collective imagination” can be expanded. Verran came up with this formulation when she sought to interpret how the different knowledge and experiences of Australian scientists and Aborigines about fire practices are negotiated: it is by finding the “right stories of sameness” that different practices and the claims on which they are based can be enacted (Verran, 2002: 731). But furthermore, and as a consequence, different practices can then be open to being done better. For me, this formulation captures how complementary data could be understood: as a sameness shared alongside differences that may have only been exchanged, but which together led to imagining something otherwise.

It is with this understanding that I also came to interpret a second friction, which concerned the design of the roadmap for taking the principles forward to co-produce a prototype of the ‘How we move’ app. One statistician repeatedly tried to apply the procedures of what is known as the “Generic Statistical Business Process Model”, an international standard for statistical offices to map the steps and processes involved in generating data (UNECE, 2019) (Figure 5). It is a structured and managerialist approach to standardising not simply the procedures but the conditions that must be met for statistics to become official. Similar to Francisca’s account of internationally standardised categories, meeting these international conditions are part of what makes statistics objective and credible.

Non-statisticians instead tried to literally draw a road and a map as a journey towards a goal but with cul-de-sacs, dead-ends, shortcuts and roundabouts. As in Francisca’s group, their interventions were critically about co-production as processual, that is, not simply a path to data extraction but the multiple activities that a mode of co-production would demand, from initial conception to ownership and long-term maintenance. The roadmap ended up being drawn like a road with all these features and with the statisticians overlaying the steps of the process model along the top and post-its specifying the fit of locations on the map to that process (Figure 6). In other words, through design the roadmap imagined a space

between the processual and managerial where sameness and difference exist alongside.

It was through frictions that differences were made more explicit and co-production could be imagined. What struck me is how beyond talk design made relations between citizens, states, and technologies present and open to speculation. That collaborating on a design was productive was especially striking when I compared it to our other experiments with methods. One involved presenting and distributing some of our articles and working papers in-progress to statisticians for comments. We expected possibly negative responses as these critically analysed power relations within their professional field, for example, and how those relations come to shape data and statistics. This, however, led to few responses and did not effectively elicit discussion. A different result occurred when we conducted a workshop that involved concept work with statisticians where we sought to critique their role and provoke them. Rather than research papers and text, we generated visualisations to explore their future relations to the private sector and the big data that platform owners and big tech companies generate (Figure 7).<sup>5</sup> The visualisation showed citizens and other non-government organisations as more distant from statistical institutes with private sector corporations becoming more important intermediaries and moving closer to them. This provoked some defensive responses and criticisms that we got it wrong. However, reflecting now on both methods—critique through text or visualisations—differences were only exchanged, connections were not made and something new did not emerge.

However, rather than separate, these other experiments were present and affected the organisation and impetus of the design workshop. Rather than singular and neatly bounded, the design workshop was part of multiple and temporally discontinuous methods and practices through which we engaged with and related to statisticians.<sup>6</sup> That is, the experimentalism of the design workshop was not isolated or apart from the multiple sites, relations, and other methods that we engaged with during the project. However, its critical difference was to experiment with a collaborative method that sought to

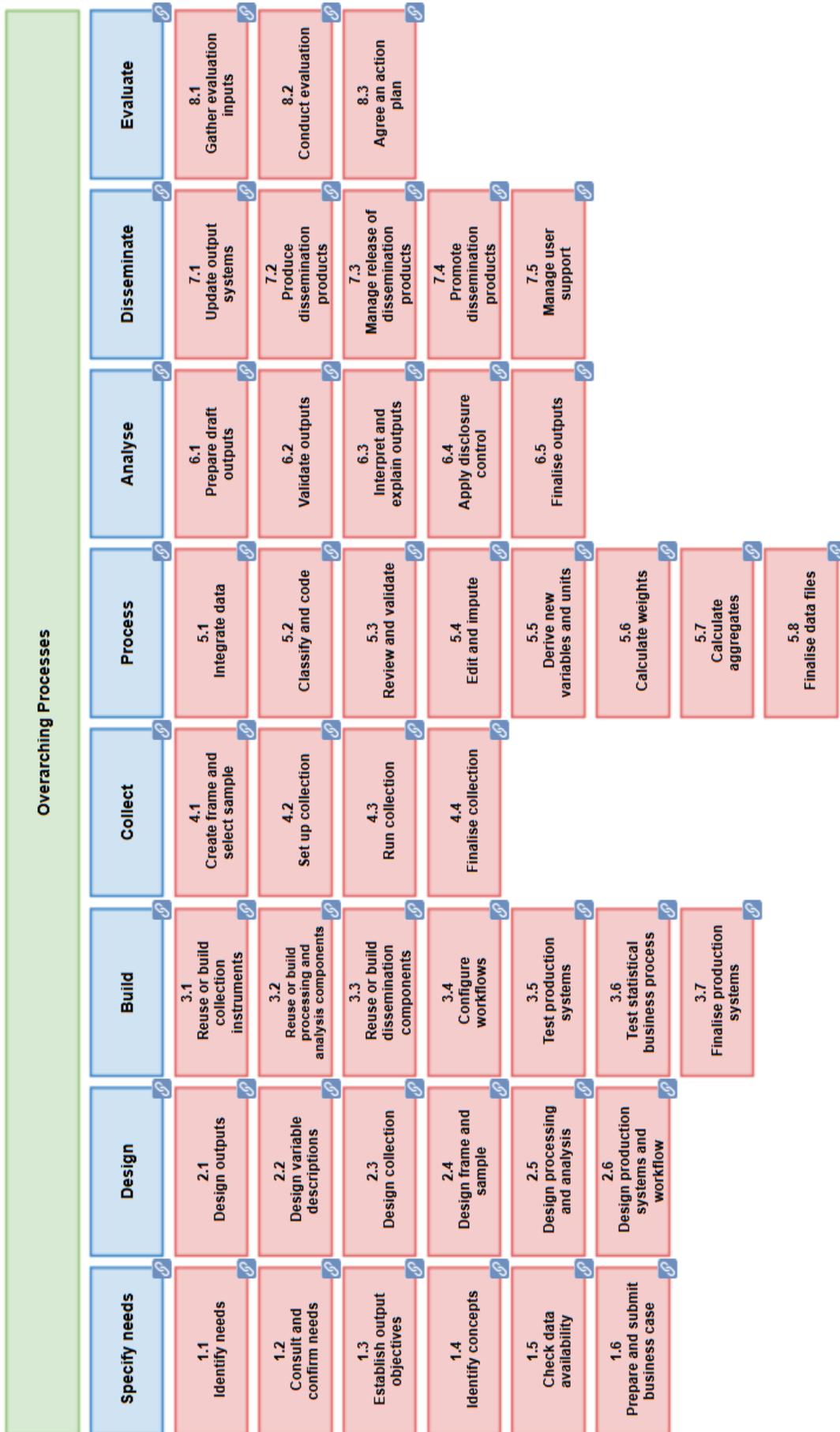


Figure 5. Generic Statistical Business Process Model (UNECE, 2019)

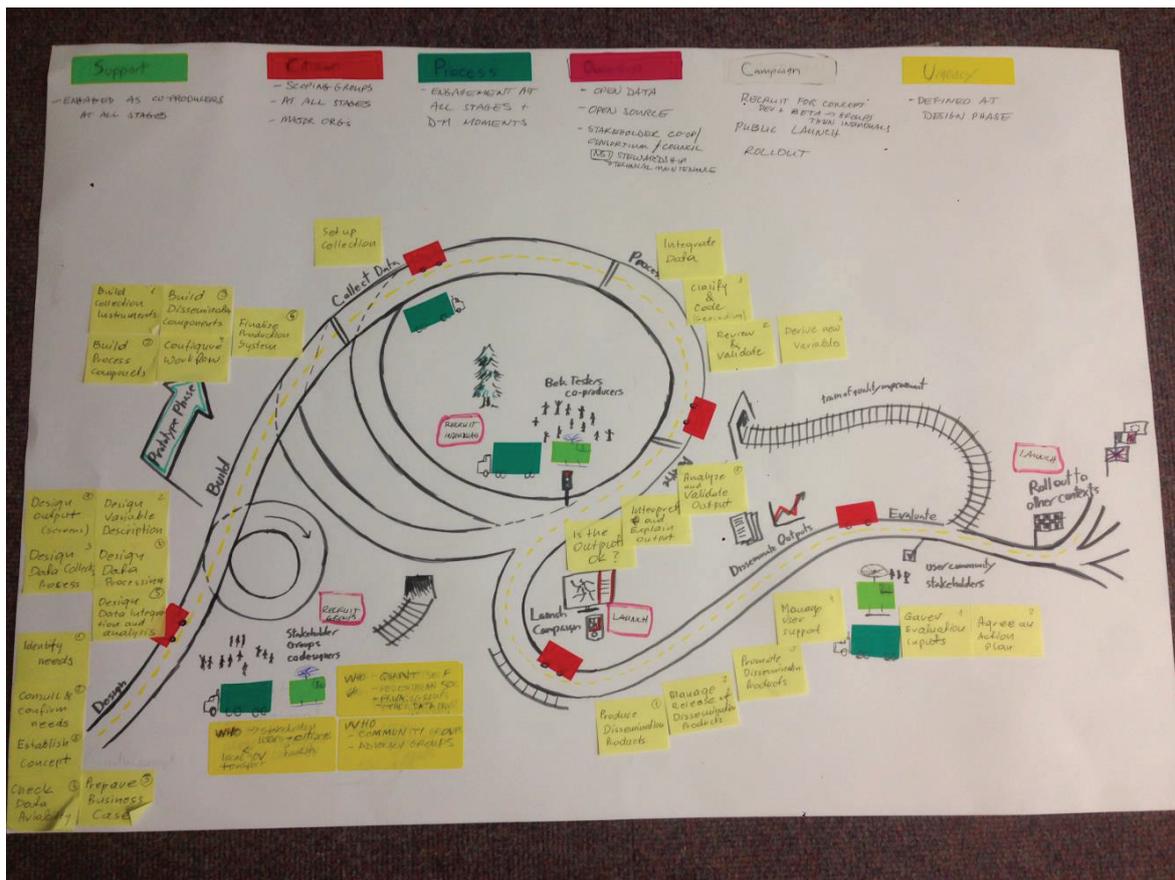


Figure 6. Roadmap for producing 'How we move'

Official Statistics in an age of Big Data

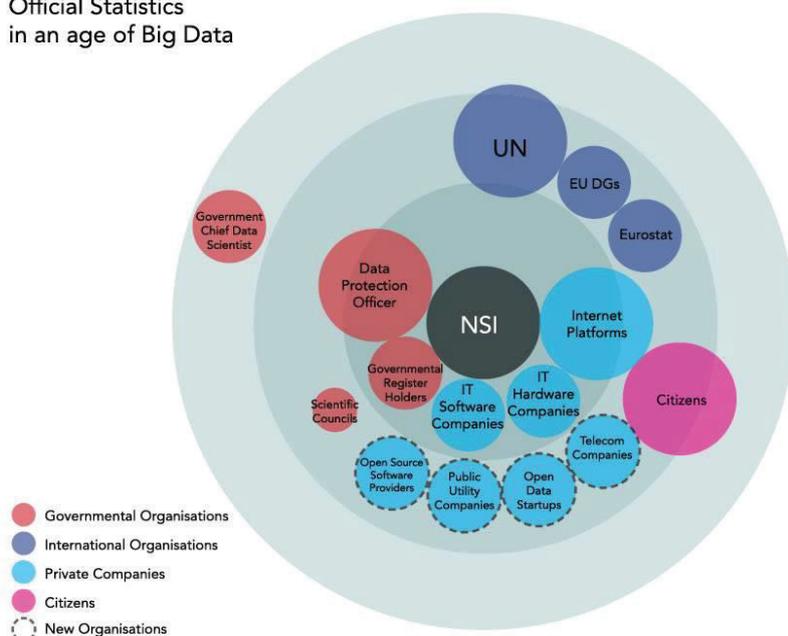


Figure 7. Visualisation of future relations in the production of official statistics

reshape relations between participants, objects of knowledge and imaginaries through designing a thing towards generating something new.

But these imaginings required openness to something other or else, to both sameness and difference. This challenged me as a researcher to be reflexive about and background my interests and, to the extent I could, let the workshop happen and go where it needed to go. That is an awkward way of expressing that other methods put the researcher in control: they observe meetings or read documents and record what they think is important and then interpret and make sense of that data. Or they ask their research subjects questions and provoke and challenge them and then again do the same. The research subject does not have the opportunity to “answer back” or say, “I don’t agree.” Collaboration, especially through design, forced me as a researcher to confront the making of a thing that materialises the ideas, principles, issues, and concerns of others which, no matter how much I might seek to affect or intervene, tended to take the workshop into directions I could not know or anticipate. For me, this meant experiencing the social interactions and relations involved in the doing of a method and its outcomes. At times, I did not support how my group proceeded, and while I sometimes asserted my ideas and intervened in ways outlined above, I had to let the group dynamic happen. That is, being a participant did not only mean intervening but also stepping back, or pausing, which is an oft-neglected form of embodiment work in collaborations (Endaltseva and Jerak-Zuiderent, 2021).

## Conclusions

The foregoing retrospective analysis of the collaborative design workshop made visible how imaginings and speculation can emerge not only through ruptures, sameness, or consensus. In addition, they can emerge through frictions in part due to the dynamics of the different situated modes of thinking and reasoning (in our case, expressed through designing) of participants.

In the first narrative about an app for producing data for CPI measurements, Francisca analysed different conceptions of citizen co-production not as misunderstandings, but as equivocations and

frictions, which were generative of imaginings. This was evident in the notion of feedback developed by her group where feedback did not only refer to communicating research results to citizens as data subjects, but also to the inclusion of citizens as active participants in app design processes. That is, inside the boundaries of current methods of producing statistics that conceive of citizens as passive data subjects, a different conception of their role was imagined. Evelyn’s narrative on the ‘How we move’ app design included similar frictions. However, a different imaginary was identified that could work alongside existing statistical processes through the partial connections forged by complementary data. Rather than a compromise, friction involved establishing complementary data as a shared space that could exist alongside international statistical standards on data quality. Finally, both narratives suggest that processes of designing together, ‘or thinging’, while challenging, are material engagements that can generate such spaces of possibility.

Overall, our findings suggest that friction is a mode of imagining through which new possibilities can emerge not by searching for sameness or consensus but by being attuned to the inevitable complications of working together. This calls for conceiving of how different imaginings can co-exist inside and alongside each other. Methodography is an ethnographic mode through which we were able to sensitise ourselves to these intricacies of collaboration. Recording, analysing, and writing our ethnographic narratives about our method-in-action helped to open up stories and sensibilities that may be lost in standard workshop reports. In particular, conducting a methodography helped to retrospectively explore difference. It captured how collaboration took shape without accomplishing the perfect alignment of collaborators. We learned not to erase difference, but to broaden stories to include discordances and apparent miscommunication (De la Cadena, 2015; Viveiros de Castro, 2004). Moreover, it helped us as researchers to address our own positions in speculative imagining, including our capacities to be reflexive and let a collaboration run its course.

In other words, a methodographical approach taught us to consider the collaborative design workshop as having a social life in the sense that

when put into action, workshop methods and their outcomes are not determined or given. From the technologies and people that make them up to the concepts, interests and power relations that are exercised, myriad contingencies are at work that shape the realities or futures that methods enact.

### Acknowledgements

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ning the citizen data workshop. Importantly, we are grateful for the time and thought dedicated to this project by the workshop participants which included some statisticians from European NSIs whom we studied. We also acknowledge that the research leading to this publication received funding from the European Research Council under the European Union's Seventh Framework Programme (FP/2007-2013) / ERC Grant Agreement no. 615588 (Principal Investigator, Evelyn Ruppert, Goldsmiths, University of London).

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## Notes

- 1 The research project is ARITHMUS (Peopling Europe: How data make a people) at Goldsmiths, University of London (2014–20). It was ERC funded and included six team members: Evelyn Ruppert (Principal Investigator), Baki Cakici, Francisca Grommé, Stephan Scheel, and Funda Ustek-Spilda (postdoctoral researchers) and Ville Takala (doctoral researcher). The field sites included: the UK Office for National Statistics; Statistics Netherlands; Statistics Estonia; Statistics Finland; Turkstat; Eurostat, the statistical agency for the European Commission; and the Statistical Division of the United Nations Economic Commission for Europe (UNECE).

- 2 Our fieldwork initially involved multiple and well-known ethnographic methods including observation, participant observation, interviews, shadowing workdays and the analysis of documents. These encompassed following statisticians' practices at various sites such as international and national statistical offices, meetings, conferences, data camps, hackathons and so on. We used techniques such as taking notes, engaging in informal conversations, and conducting in-depth interviews as well as participating in conference calls, following or participating in intranets, wikis, websites, listservs, emails, and webinars, and monitoring, compiling and analysing tweets. These techniques are core to ethnographic methods that conceive of researchers as observers and interpreters of field sites and research subjects as informants. For further elaboration see Scheel et al. (2019).
- 3 The literature on design at the intersection of the fields of design, STS and related fields is expanding quickly in diverse directions. To illustrate, at the intersections of STS and design, prototyping has been proposed as a research practice, and as a site of research to understand how futures are at the same time constrained and generated (Tironi, 2020; Tironi and Hermansen, 2018). Furthermore, design practices have been proposed as 'creative methods' or an 'in-between' research space to map the challenges introduced by emerging technologies (Marres et al., 2017). In anthropology, prototyping has been marked as a relevant object of research (Murphy, 2016), as well as a notion that can characterize emerging methods of (interventionist and speculative) ethnographic research (Marcus, 2014). Similar moves have been made in sociology, where design has been proposed as a mode of research critically attuned to human-machine entanglements and for play and speculation (Lupton, 2017). We cannot do justice to the diversity and richness of work in this field; which partly is a consequence of the particularities of each field site and research problem bringing forth different variations and applications of design and prototyping (also see Estalella and Sánchez Criado, 2018 for a wide variety of practices). Finally, the particulars of our field site and topic mean that our uptake of thinging is different from Binder et al.'s (2015) proposition, which is attuned more to a concern with contributing to a 'parliament of things'.
- 4 There is a diversity of epistemological and ontological meanings of citizen science; see discussion in (Kasperowski and Kullenberg, 2019).
- 5 The visualisations were generated by Francisca Grommé, Ville Takala and Dave Moats. On visualisations, see also Karasti et al. (2021)
- 6 This is a point that Candeia (2013) makes in relation to ethnographic fieldsites.