11

The Theatre of Failure

Social Media's Role in Demonstrating Mundane Disruption

Jessamy Perriam

The Science and Technology Studies (STS) literature pays attention to how knowledge is transferred between actors. We might imagine that we are transported back in time to seventeenth-century experiments at the Royal Institution in Britain where new scientific discoveries are shown to upper-class gentlemen (Shapin and Schaffer 1989). We gather around a television set in the mid-twentieth century to watch a broadcast of a controlled train crash in the hopes that we will believe that transporting nuclear materials on the national rail network is a safe practice (Collins 1988). We join aeronautical engineers in engine strike experiments as they fire frozen birds at jet engines to instil a sense of faith in aircraft at take-off and landing (Downer 2007). We meet with a group of white-collar managers as a company pitches some software that promises to make their working life easier (Smith 2009; Coopmans 2011). Put simply, in the STS literature, we are shown demonstrations and events that focus on success. But while we focus heavily on success, we neglect the fruitful role that failure has in describing how accountability is shaped and enacted.

This chapter describes the bias towards success (Marres and McGoey 2012) that exists in the STS literature on demonstrations. This is done by discussing existing concepts about demonstrations such as the theatre of proof (Shapin and Shaffer 1989; Latour 1988; Collins 1988; Pinch 1993; Downer 2007), the theatre of use (Smith 2009; Coopmans 2011) and building on the emerging concept of the theatre of failure (Grommé 2015; Perriam 2018). The theatre of failure is developed by suggesting that digital settings such as social media platforms allow for a high level of publicity, enabling demonstrations of failure to be effective. Further, I describe that it is the algorithmically produced publicity of social media platforms that allows citizens to demonstrate disruption to those responsible for providing a good governing order.

A practical example of how the theatre of failure could be empirically productive is given by how the public transport organization Transport for London (TfL) uses Twitter to demonstrate failures and delays in their infrastructure to aid commuters in planning alternative journeys. The description also shows how commuters are able to use social media platforms to make enquiries and demonstrate disruptions they are encountering on their journey. This example further defines how those interested in adopting STS standpoints could use the concept of the theatre of failure to observe accountability being enacted on social media platforms.

DOI: 10.4324/9780429355950-14

This chapter concludes by describing the direction that the digitally situated theatre of failure is moving towards with the introduction of less visible methods of demonstrating disruption in customer service settings. The introduction of non-human customer service actors takes demonstrations of disruption into more digital settings away from public view. I suggest that this reduces the visibility of demonstrations of disruption and could impact the chains of accountability between publics and institutions in digital settings.

The aims of this chapter are twofold: (1) it provides a standpoint on failure from an STS perspective and (2) it shows how digital and social media are used in demonstrations of failure.

The Theatre of Proof and Public Experimentation

When reading about public demonstrations, we are able to explore the existing STS literature for examples throughout the previous centuries. In particular, we are pointed towards seminal texts that describe the theatre of proof from Enlightenment era scientists and from twentieth-century policymakers.

The theatre of proof described by Shapin and Schaffer (1989) outlines the purposes and performativity of Enlightenment era demonstrations of scientific discoveries. They detail the process that scientists such as Thomas Hobbes and Robert Boyle went to in convincing the seventeenth-century British public of the new knowledge created by their respective air pump experiments. The purpose of demonstrating these discoveries was to allow the public to see the results of scientific experimentation with their own eyes. However, these demonstrations were intended to be persuasive, hence the term "theatre of proof." These demonstrations were well rehearsed; it was as much an entertaining show as an educational experience or persuasive act.

Latour (1988) also describes the theatre of proof regarding scientific discoveries by Louis Pasteur. He describes how vaccines had to be publicly demonstrated and discussed in order to encourage their use by farmers and the wider agricultural industry. This shows how the theatre of proof goes beyond the entertainment and education of demonstrations within the Royal Institution, towards demonstrations that intend to be a persuasive act, convincing the audience that a particular course of action would be beneficial and thus, enrolling them in a particular practice.

It is also in these examples of the theatre of proof that Shapin and Schaffer introduce the term "modest witness" to describe the public audience that is able to participate by observing these experiments and how they in turn are expected to validate the demonstrated knowledge. Haraway (1997) critiques the "modest witness" from a feminist and postcolonial perspective, remarking on who was not able to be a modest witness and therefore unable to participate in solidifying or rejecting new knowledge from the seventeenth century through to the late twentieth century. Haraway calls for a queering of the modest witness to allow for greater visibility of those previously excluded. However, the concept of a theatre of failure on social media brings into question the concept of a modest witness. Can the setting and its specificities of these digital demonstrations shift the modest witness into a role that is less passive, more public, far more diverse, and readily able to demand accountability or explanation of a failure?

Persuasive theatre of proof demonstrations can also be seen outside of the scientific arena, in public policy discussions. This persuasive element of the theatre of proof has been emphasized in reference to twentieth-century demonstrations. Collins (1988) describes the televised controlled crash of a train carrying nuclear materials to convince the public of the safety of transporting hazardous materials by rail. Collins critiques descriptions of these demonstrations as "public experiments" because, much like the demonstrations conducted in the Royal Institution in the seventeenth century, these experiments are highly planned and rehearsed. Due to the specificities of the experiment and the medium through which it was broadcast, the demonstrations occurred away from the majority of the audience as a "distanced demonstration."

This example of a distanced demonstration raises questions that become relevant when we begin to examine digital demonstrations. Does the distanced nature of this demonstration make it any less persuasive? And does it lose its efficacy when failure – rather than proof – is demonstrated?

Collins' description of public experiments echoes a twenty-first-century account of demonstrations by as boyd (2017), who describes her experience of demonstrating research projects to visitors when she was working at the MIT MediaLab in 2002. The experience that boyd depicts is close to the idea of public experiments that Collins puts forward.

> From our first day in the group, we were trained to be able to tell the story of the Media Lab, the mission of our group, and the goal of everyone's research projects. Furthermore, we had to actually demo their quasi-functioning code and pray that it wouldn't fall apart in front of an important visitor [...] The demo was a prop. Everything about what I do as a researcher is rooted in the goal of using empirical work to help challenge people's assumptions and generate new frames that people can work with. I have to understand where they're coming from, appreciate their perspective, and then strategically engage them to shift their point of view.
>
> *boyd 2017, LinkedIn post*

In boyd's account we are shown both the fragile nature of the "public experiment" and the pressure to use the demonstration as a vehicle to persuade an audience of an idea, discovery or new perspective. She also takes seriously the allusion to theatre, describing the demonstration as a prop to aid in shaping the audience's standpoint.

But not all demonstrations fall neatly into the category of theatre of proof. Other demonstrations have work to do *in addition to* convincing an audience that something constitutes knowledge; they must convince an audience to make a purchase. These demonstrations fall under the category of "theatre of use."

Theatre of Use – Introducing the Digital to Demonstrations

In the twenty-first century, the focus of demonstrations literature shifted away from the theatre of proof towards what Smith (2009), and Coopmans (2011) describe as the theatre of use, with a focus on information technology (IT) demonstrations (Simakova 2010).

The theatre of use takes place in settings such as the IT sector rather than science and public policy experiments. As the name suggests, these demonstrations focus on the potential uses and situated practices of IT rather than on persuading a public audience of the validity or veracity of a scientific discovery or public policy. As Smith describes:

> the IT demonstration is understood as a Theatre of Use in which a possible sociotechnical system is represented dramatically through the actions of the demonstrator interacting with the technology [...]. Projects carried out to devise and introduce technologies of this sort almost invariably involve carefully staged demonstrations performed for audiences made up of the staff and advisers of the host organisation.
>
> *Smith 2009, 449–50*

As the term "theatre of use" suggests, these demonstrations intend to show an audience how a product (in this case, software) might be used to produce certain results. The rationale is not too dissimilar to Goffman's (1959) descriptions of vacuum cleaner salespeople, but the audience is larger and more varied, while the setting is less intimate than the home environment.

The theatre of use is also rife with complex social negotiations due to the commercial rather than scientific nature of these demonstrations. The audience is fragmented into many publics, according to their respective interests in the product. Coopmans (2011) describes this fragmentation in her ethnographic participant observation of working with a medical imaging company. She pays particular attention to the tactics deployed by the company while demonstrating their software at a conference display, a theatre of use where the audience is somewhat unpredictable. For instance, when someone who was in the market to purchase the software came past the display, staff would present the features that were perceived to be most beneficial to the audience. The intention of this is that the audience would be able to imagine how the software would be used within a setting of situated practice. However, if someone considered a competitor to the software company came past the display, staff would give a redacted demonstration, so as not to give away trade secrets.

Smith (2009), Simakova (2010) and Coopmans (2011) deploy the theatre of use to describe demonstrations that differ to those in the theatre of proof. These differences involve demonstrating a new technology – rather than a scientific discovery – with the intention of convincing the audience to purchase a product.

These delineations between theatre of proof and theatre of use are also helpful when considering digital demonstrations. Smith, in particular, describes the framing of these demonstrations and how the audience and the demonstrator are situated. However, digital demonstrations of disruption begin to diverge when considering the physical and temporal distances between the demonstrator and audience on digital or social media. In the theatre of use, the audience and demonstrator are still situated in the same space at the same time.

What is also apparent is that demonstrations within both the theatre of proof and the theatre of use are highly positive. That is, demonstrators within these theatres intend to show that something is true, safe, successful or worth purchasing. In comparison, a demonstration of failure uses scripts to convince its audience to stop or consider alternatives. The following sections of this chapter will explore how demonstrations of failure and disruption are an increasingly important aspect of digitally mediated relations. An important objective that follows from this observation will be to determine what can be gained from studying theatres of failure.

Bias towards Success

An imbalanced focus on success is being articulated in STS as Marres and McGoey (2012) argue that a bias in favour of success occurs when describing modern experiments in markets (such as carbon trading schemes) and sustainable housing renovation. They phrase this phenomenon as a "bias towards success" (also, Miyazaki and Riles (2008)), suggesting that failure in experiments within a political economy are designed to be performative. That is, the failure will lead to learning that can eventually turn a profit. By employing a typology of failure, Marres and McGoey suggest that we can analyse failure in a more fine-grained way.

I focus on two of Marres and McGoey's three types of failure to determine their relevance for those encountered in the case study below. The first type of failure is *entropic failure* where "failure serves to compound and solidify the authority of the individuals and institutions that presided over the failing arrangements to begin with" (Marres and McGoey 2012, 4). They then frame *generative failure* "as a productive event, in which experiments provide opportunities for the demonstration of flaws and insufficiencies of the propositions and arrangements that they put to the test" (Marres and McGoey 2012, 5).

One empirical example that counters the theatre of proof and theatre of use biases towards success is Grommé's (2015) study of aggression monitors in a Dutch bus station. Grommé observes the introduction of aggression monitors, which are triggered by sounds of a certain volume and audibly notify security staff to patrol or investigate the area that triggered the alarm. In her fieldwork, she noticed that security staff in the control room soon became weary of the aggression monitors, particularly because they frequently triggered false alarms rather than alerted problematic behaviour. The security staff demonstrated the failure of the aggression monitors to those who introduced the system by disabling the alarm function of the monitor so that they could focus on observing the CCTV monitors without distraction. This demonstration of failure and distraction eventually resulted in the aggression monitors being removed from the bus station.

Grommé's work is one of a few examples of what might be called a theatre of failure, that is, demonstrating something that *is not* working.

Failure has also been addressed in STS with a primary focus on infrastructure or policy failure. For instance, Latour (1996) details the plans, development and ultimate failure of an ambitious personalized public transport scheme called Aramis. In the book *Aramis (or the Love of Technology* (1996)), Latour takes on the thinly veiled persona of a professor/public policy detective with an imaginary student to investigate how research and development of the scheme in Paris was destined to fail due to a lack of investment of time and care. Latour exemplifies the STS mantra of "follow the actors" by detailing the decisions, mistakes and actions taken by government ministers, French civil servants and engineering firms that led to the failure and scrapping of Aramis.

Another seminal STS text, "Ethnography of Infrastructure" (Star 1999), explains that failure reveals infrastructure to us where we previously would have taken it for granted. This revelation through failure allows us to investigate and maintain the infrastructure and consider how pivotal it is in the smooth running of everyday life. More recently, Ellis (2020) takes a view on infrastructural failure in the U.S. that incorporates Normal Accident Theory (Perrow 1984) – a theory used to describe how complex systems are set up and react to failure with varying degrees of resilience – to explain the implications of deregulation and underinvestment for the security and functioning of critical national infrastructure in the U.S.

While these STS views describe the networks of actors, policies and actions that contribute to a failure, they rarely go on to describe how that failure is demonstrated to the publics affected by them. We stand to learn a lot from taking the extra step in examining demonstrations of failure in addition to the conditions around the failure itself. To extend the Star attribute that infrastructure is "visible upon breakdown," dependent publics become visible upon failure.

Using the Theatre Metaphor to Investigate Failure

The theatre metaphor has been used widely within social psychology and STS to investigate interactions between people. Of particular note is Goffman's (1959) use of dramaturgy when describing the presentation of self in everyday life. We are able to use this to observe who is demonstrating something, whom their intended audience is comprised of, and how different objects or stages contribute to a performance. While media and communication scholars have used Goffman's work to describe social interactions amongst users in communities on digital media and platforms, STS scholars, in comparison, have looked at how the non-human attributes of these platforms act as "the stage" and "the props" that enable these acts to take place by incorporating an actor-network theory (ANT) approach.

However, when demonstrating failure, these two disciplinary approaches to the theatre metaphor must come into play. When we consider failure within the theatrical metaphor, we must frame it as an event that is conveyed by an actor to an audience. This raises questions of what to pay attention to in their performance: Who is the actor? What are they telling us? How are they telling us about a failure? How do they use "the set" as part of their performance? What objects or artefacts are they using to convince us of the failure? What do they expect us (as an audience) to do about it?

Examples of Theatre of Failure

These questions pertaining to performances can be deployed within a (digital) ethnographic approach to observe failures as they are described and demonstrated to a public audience. One such example of how a theatre of failure could be used as a heuristic to observe demonstrations is the Fuckup Nights franchise of events held in cities around the world. The Fuckup Nights is a storytelling event where people take to the stage and tell their stories of professional failure primarily as a form of entertainment to an audience which has specifically gathered to hear tales of failure and embarrassment (we could perhaps see this as a form of schadenfreude, or taking pleasure in another's failure, or at least being entertained by it) (Fuckup Nights 2021). But the organizers of Fuckup Nights bill these events as a form of redeeming the failure itself, not only entertaining the audience but informing and educating them about what failure looks like and how it can be celebrated. In this sense, the Fuckup Nights can be seen as generative by turning a demonstration into a positive experience where someone can be congratulated for owning their failure and moving on from it and publicizing their resilience to prospective employers or collaborators.

While the theatricality of failure brought about by Fuckup Nights is of interest to those particularly within organization and innovation studies, due to its focus on work, it lacks an everydayness – while attendees of Fuckup Nights witness failure being normalized, even celebrated, members of the audience walk away thinking they probably will not experience it for themselves.

The next theatre of failure that is worth looking at focuses on mundane failure in everyday settings. Not every failure needs to be spectacular to be considered worthy of demonstration, as this next example shows.

Social Media as a Setting for Theatres of Failure

On any given day in London between 2012 and 2020, the social media managers at TfL communicated failures on their public transport network to commuters via Twitter. These failures are momentary and rarely life changing; we could consider them to be mundane. But they are failures nonetheless: A train breaks down and causes delays on a line, a water main bursts along a bus route and places buses on diversion, a person falls onto the tracks at a station and causes all services in and out of the station to be stopped until the matter is taken care of. To follow Star (1999), these are moments which make infrastructure visible. But STS as a discipline is not only interested in failures for what they can tell us about making infrastructures visible. STS is also interested in how failures produce moments of accountability and responsibility between citizens and institutions. Using the heuristic of the theatre of failure can help us observe how accountability and responsibility are enacted in response to mundane failures. This looks different depending on who is demonstrating a failure. If a citizen is performing a failure to an institution, then we can expect to see the audience (that is, the institution) respond by taking responsibility for the failure by at least explaining what is happening. Alternatively, an institution can demonstrate a failure to citizens as a form of pre-emptive accountability that allows the citizen to decide how they would like to go about their everyday life in light of a failure that prevents them from taking their planned journey or completing a task.

Social media platforms offer organizations such as TfL the specificities to demonstrate a public transport failure to many people across multiple locations. However, these same specificities also allow a commuter to demonstrate a disruption to TfL and to those who follow both parties. This results in demonstrations being public with a broad audience, rather than private with a specific, selected audience. Due to the black-boxed, algorithmic specificities at play, the audience resembles those that Collins refers to in his discussion of televised public safety demonstrations. While the TfL staff gets to know some commuters who regularly post on social media, in general, the audience is distanced and unknown to those involved in the demonstration.

The remainder of this chapter explores how the theatre of failure in digital settings becomes a space where accountability is enacted. If we consider social media platforms to form a stage (Gillespie 2010) in a literal, theatrical sense, then we can observe how it allows failure to be demonstrated and responded to using particular scripts. Sometimes that response is an acknowledgement of failure occurring; other times it is an explanation for the failure. Still other times it asks what might be done differently in order that future efforts might be successful.

Digital and social media are emergent theatres of failure due to the specificities that encourage accountability. To clarify, accountability in the context of the theatre of failure does not take a quantitative form (Neyland 2019). Rather, accountability takes a qualitative form, often with information or explanation given or demanded in the form of text and sometimes images and video (Neyland and Coopmans 2014). Given that the empirical material deals with mundane public transport disruption, my focus for this chapter resides in the former two responses for failure: acknowledgement and explanation.

Mundane disruptions are those that we may have responded to differently in a time prior to widespread use of social media, and we encounter them in our everyday encounters online. A friend might use Facebook to complain about their food delivery arriving late, or we witness a colleague on Twitter make mention of an airline that has cancelled their scheduled flight. These encounters are made visible to us through the largely black-boxed specificities of the social media platform's algorithm.[1] This set of specificities makes the theatre of failure particularly potent for the purposes of accountability. The audience for these types of demonstrations has the potential to be so large and removed from the original person making the demonstration that the consequences for not responding can be damaging in terms of the reputation of those held accountable. In other words, a demonstration in a social media theatre of failure has the potential to go viral and incorporate a broader audience than initially envisaged.

Researching the Theatre of Failure

Earlier in this chapter, the idea of using the theatre of failure as a heuristic for observing and analysing failure was described. But what could we use from our methods toolkit to engage with this heuristic? Previously, studies of the theatre of proof often relied on historical or archival documents to describe how new knowledge was conveyed in the Enlightenment era (Shapin and Schaffer 1989). Meanwhile, studies of the theatre of use rely on ethnographic methods such as participant observation to examine how software companies demonstrate the potential application of their products in situated practice (Smith 2009; Coopmans 2011). However, with the inclusion of digital settings as a possible stage for the theatre of failure, a broader range of methods – such as digital methods and digital ethnography – becomes available to researchers.

An ethnographic approach involving observation and interviews can be deployed to gain a partial perspective of the theatre of failure. However, this must also be supplemented with a mixed-methods approach to describe the specificities of the digital setting such as the software, the infrastructure and processes that contribute to the situated practices of demonstrating disruption. It is also worth mentioning that the specificities of digital settings, such as the social media platform Twitter, are not stable (van Dijck 2011).

From an STS perspective, a Post-ANT approach (Michael 2016) can be helpful as a methodology for both observing and analysing events with the theatre of failure. Post-ANT operates on the proviso that there may be multiple manifestations (Mol 2003) and understandings of actors, objects and events. This approach also allows a focus on the "situated actions" (Suchman 1997; 2006) of the actors involved across both material and digital settings.

Observing Transport for London's Theatre of Failure

In this section I describe how TfL used social media as a theatre of failure to proactively demonstrate failures to commuters. In 2009, TfL signed up for a Twitter account (@TfL) that primarily served a public relations function. In the lead-up to the London 2012 Olympic Games, TfL embarked on a pilot study to trial the use of Twitter for live service updates. The rationale was that the Games would bring an influx of visitors who would likely have limited familiarity with the city or the TfL network. To compound this, many venues across the city would only be used on certain days or times with the potential of overcrowding on trains and at platforms. They thought that visitors would likely not have access to updates via local media, but they might be likely to have a Twitter account on a device connected to the Internet. This pilot was considered to be successful and the use of social and digital media for live customer service continued.

In 2016, I observed TfL's social media customer service team use Twitter as a theatre of failure and noticed that it was not only commuters demonstrating disruption. TfL used their social media accounts to proactively demonstrate known disruptions to commuters to avoid complaints and refund claims by helping commuters find alternative routes. These proactive demonstrations took two forms: live service updates and direct message subscriptions.

Live Service Updates

Live service updates are the most common form of demonstrating failures on a particular service. TfL has a central source of live service data referred to by staff as the "rainbow board."[2] The data for the "rainbow board" is generated by control room staff who determine whether a line is running with minor delays, major delays or severe delays. This "rainbow board" data is fed to outputs across TfL and beyond using an application programming interface (API). For example, many London Underground stations have a display screen in the ticket hall showing live service information. Outside of TfL settings, other transport apps such as Citymapper make use of TfL's API and open data to help their users plan journeys on their smartphone.

The purpose of live service updates is to keep commuters informed about failures on any given line, so that commuters might route around lines with delays and avoid situations where they ask for refunds. More practically, commuters are kept informed and encouraged to seek alternative routes in order to avoid overcrowding in areas of delay or disruption.

These disruptions are caused by many failures that can bring a public transport infrastructure to a halt. The live service updates follow a familiar script so that the commuter can be fully informed about the nature and severity of the disruption. For example, the severity of the disruption (minor, major and severe) would always be at the start of the tweet, as this indicates how long the delay will be. Following the description of the delay's severity, there would be a brief description of the cause. For example, signal failures, people getting sick and needing medical assistance, and in unfortunate circumstances, people on the track.[3] In some circumstances where an incident is unfolding, the tweet may be vague with scripts such as "ongoing incident."

These scripts for live updates are consistent and predictable so that TfL staff can create them easily and their audience can understand and act upon them quickly. These scripts are often similar, if not identical to announcements made by staff on platforms or by drivers.

Direct Message Subscriptions

Live service updates on social media platforms are only as useful as their ability to be presented in a way that is as timely as possible. TfL's social media customer service agents faced a disruption of their own where Twitter's lack of stability (van Dijck 2011) hampered the timeliness of their updates. In 2016, Twitter shifted to presenting users with a feed of tweets arranged algorithmically, rather than in reverse chronological order as they had done previously. This reconfiguration of Twitter meant that commuters no longer saw live service updates in a timely manner.

As a remedy, TfL and Twitter developed a direct message subscription service for commuters who wanted notifications about failures on the TfL lines of their choice. Commuters went onto the TfL website and logged in to their Twitter account to select which services and times they wanted to receive direct message notifications for. When a delay was logged on the rainbow board, it automatically sent direct message updates to the commuter, outlining the delay along with a link to plan a journey around the disruption.

Automated demonstrations of disruption such as direct message alerts aim to prevent customer service staff fielding many queries about the same delay or cancellation, that is, avoiding the same script being played out in the theatre of failure multiple times in quick succession. However, these demonstrations and discussions of disruption are not broadcast to a wide audience; they are kept within the confines of the customer's direct messages and also obscure the visible demand for accountability.

In 2020, TfL discontinued this service on Twitter in favour of consolidating their live information into an app, but a chat bot service still exists on Facebook for commuters to gather live information about public transport services. But automated displays of failure such as direct message subscriptions and chat bots make us consider other ways in which a theatre of failure might be configured. Indeed, these automated theatres of failure are more scripted than those made by human customer service staff in terms of the scripted code needed to run them. What are the accountability implications for this if there is no clear avenue to gain a human response if necessary?

Accountability and the Theatre of Failure

In earlier sections of this chapter, the purposes of the theatre of proof and theatre of use in demonstrating new knowledge or products to the public and securing their acceptance and enrolment was addressed. In particular, the theatre of proof aims to persuade a predefined public about the veracity of knowledge through a performed demonstration. These predefined publics are often exclusive; the Enlightenment era scientific demonstrations were almost always performed for "modest witnesses" comprised of middle- and upper-class gentlemen. Similarly, the televised demonstrations of controlled crashes are performed for those who are politically or economically invested in the outcome.

Likewise, the theatre of use aims to persuade a public of the usefulness and applicability of a new technology or product in order to make a sale. The theatre of use is similar to the theatre of proof in that it aims to do this through a performed demonstration.

The theatre of failure differs as the public has already been enrolled in the product or process. The act of demonstrating a disruption from the point of view of an organization is to maintain *their public perception of competency*. Conversely, the ability for a customer to demonstrate a disruption they have encountered is done in the hopes of gaining accountability from an organization. The specificities of social media platforms such as Twitter mean that a commuter can be both a modest witness and a demonstrator of failure to an audience of the accountable institution (Garfinkel 1991; Neyland 2016) along with other social media users. The chains of accountability between the public and the addressee are shortened, with an expectation of a swift response.

The theatre heuristic allows researchers to examine the means by which these failures are demonstrated with the help of human and non-human actors. This is where digital settings such as Twitter become of particular interest due to the different attributes, formats and actions available to citizens and institutions when performing the failure at hand.

An example of this could be seen when TfL was performing planned failures of an underground line in order to carry out engineering works (Perriam 2018). In previous tweets, they merely stated through text the information about the planned engineering works, which received a lukewarm or hostile response from commuters, especially if this was a regular (albeit necessary) failure. However, when they included a photograph of the engineering work taking place in the tunnels, the response was more supportive and understanding. Regardless of whether the person viewing the picture had the engineering knowledge to understand the work being done in the photograph, citizens were able to witness the necessity of the failure for themselves. From this example, we can see the props within the theatre of failure at play. And we can begin to make comparisons to the theatre of proof; a photograph shared on social media can elicit a similar proof response to that of an experiment performed in a lecture hall centuries ago. This echoes other social scientists such as Goodwin (1994) and Haraway (1997) who assert that to a certain extent seeing is believing when it comes to proving that an event took place or enhancing the credibility of someone's expertise on events – in this case, failure.

It can also go the other way as institutions such as TfL can be modest witnesses to their own disruptions and pre-emptively tell the (relevant) facts and no more of the situation. This ability to broadcast live disruption information via Twitter as a theatre of failure allows TfL to retain an authoritative voice over their infrastructure. In this sense, the theatre of failure's purpose is to deliver more than just information and acknowledgement of failure and disruption. As a by-product, the authority and trust of an organization is reinforced by demonstrating the failure for which they are responsible. Failure is normalized as being mundane through the support of a failure script that is recognizable and acceptable to its audience.

Inequalities and the Theatre of Failure

As described earlier, theatres of failure are not necessarily static in their configuration, as evidenced by TfL opting to reduce their use of Twitter for live updates in favour of asking commuters to use a new app with journey planning services and live updates. While the organization knew this was going to happen a year in advance, Twitter users only found out when final tweets were sent from the accounts before being made inactive. This deconfiguration of TfL's theatre of failure on Twitter was met with anger and disappointment from citizens who relied on this service. In particular, mobility activists relied on Twitter to gain real-time updates on specific network failures such as elevator breakdowns that reduced their ability to navigate the city. Activists found this problematic on three accounts: (1) there was not enough notification of the deconfiguration; (2) they felt they were not consulted on the change; and (3) the app was initially only available on iOS devices.

This example demonstrates that when it comes to locating the theatre of failure, power relations are not necessarily equal. In this case, TfL chose to relocate their theatre of failure within a different digital setting with attributes or specificities that allow for different ways of mundane failures being presented to citizens. While TfL promised a better service with the app, in reality it represented a loss of service for parts of the public who relied on real-time service updates the most. While TfL can argue that citizens are able to access real-time updates in a swift manner with little human intervention, there is no readily available theatre of failure for the citizen to ask for accountability from the responsible institution.

Conclusions: The Demonstration of Mundane Failures and Beyond

STS by its very nature and its origins in laboratory studies focuses on how science is made and conducted, and then accepted by the public as knowledge. While there have been studies of failed technologies within STS, such as Latour's (1996) study of the ill-fated Aramis transport system, these are considered to be more historical accounts of failure rather than observable, ethnographic accounts.

Through the use of social media in everyday life, we are now able to observe the theatres where failure is demonstrated, the scripts that are used to explain routine failures and the attempts at displaying accountability and gaining trust in ways that have previously been less accessible to researchers.

As this chapter has outlined, STS is concerned with how knowledge is produced and by whom. Moreover, STS is concerned with how knowledge is demonstrated and dispersed to publics through a series of human and non-human (and sometimes more-than human) actors. This focus on demonstrations of knowledge has led to different heuristics with which researchers can observe this process of dispersing new information to publics. These heuristics have been known as the theatre of proof and the theatre of use and, as such, have taken on the analogy of the theatre in order to focus on identifying the actors within a demonstration.

This chapter has detailed the history of demonstrations in STS literature along with how they have been mobilized to enrol publics to accept new knowledge or products. Building upon these examples of the theatre of proof and the theatre of use, I suggest that social media platforms and their specificities afford a means for publics to demonstrate disruption to companies or institutions. The algorithmic specificities of the theatre of failure create a broader audience to encourage publics to demand accountability from these organizations in the form of explanation, information or compensation.

This chapter deals explicitly with why it is important to study how failure is demonstrated in everyday, mundane practices. By using a theatrical metaphor, it specifically builds on how other STS scholars have modelled the theatre around positive demonstrations of scientific knowledge, success and use. The theatrical metaphor is also being taken up and built upon by other STS scholars, such as Cellard (2021) with the respective theatres of accountability and transparency, which examines how algorithms are demonstrated by civil servants to citizens for the purpose of accountability in the French public sector. The STS focus on success when deploying the theatrical metaphor around knowledge production provides a space to challenge the bias towards success. While the theatres of proof and use give an opportunity to examine success, in the same way, a theatre of failure could be conceived of as a heuristic to examine what failures are produced and demonstrated, by whom and how.

The theatre of failure is an analytically helpful concept when faced with phenomena or observations that do not fall neatly into the established categories of theatre of proof or theatre of use. It exists as an analytical tool to help observe demonstrations of failure and instability. It also exists as a space within which accountability occurs and trust is built or rebuilt. Contrary to the theatres of proof and use where only experts in science or technology are able to command an audience, in the theatre of failure, anyone can be an expert in the disruption they are experiencing. The person demonstrating a disruption may not be an expert in the causes of their disruption. However, they are the expert in the instability they are experiencing. The theatre of failure also helps analysts examine the accountability that occurs as a result of having a mostly unknown audience. The onus is on the institution responsible for the disruption not only to make amends but also to provide an account of that process. However, from the example of TfL's use of Twitter as a theatre of failure, we see that the audience of a demonstration of disruption is not stable.

When the theatre heuristic is applied to failure, it reveals how accountability and responsibility for the failure are enacted. Moreover, within digital settings such as social media, failure can be demonstrated through a series of human and non-human actors: social media managers, tweets, photographs, Open Data APIs, chatbots, direct messages and citizens. The heuristic can also highlight who is able to witness demonstrations of mundane failure and who is left with little access or accountability.

Notes

1 Although Twitter allows people to temporarily disable the algorithmic display of tweets in favour of a reverse chronological feed, this is not the default setting.

2 It is called the "rainbow board" because when presented visually, each line is represented by its color and resembles a rainbow.

3 While events such as people getting ill on trains, commuter suicide and terrorist attacks do result in disruption to the infrastructure, it is not accurate to label them as failure. Fisch's *An Anthropology of the Machine* (2018) analyses these events and their significance in greater detail with reference to Tokyo's commuter train network.

References

boyd, danah. 2017. "How 'Demo-or-Die' Helped My Career." *LinkedIn Pulse*, August 2. Accessed February 2, 2022. www.linkedin.com/pulse/how-demo-or-die-helped-my-career-danah-boyd

Cellard, Loup. 2021. "Theatres of Transparency: A Post-Digital Ethnography." PhD diss., University of Warwick.

Collins, H. M. 1988. "Public Experiments and Displays of Virtuosity: The Core-Set Revisited." *Social Studies of Science* 18, no. 4: 725–48.

Coopmans, Catelijne. 2011. "'Face Value': New Medical Imaging Software in Commercial View." *Social Studies of Science* 41, no. 2: 155–76.

Dijck, José van. 2011. "Tracing Twitter: The Rise of a Microblogging Platform." *International Journal of Media & Cultural Politics* 7, no. 3: 333–48.

Downer, John. 2007. "When the Chick Hits the Fan: Representativeness and Reproducibility in Technological Tests." *Social Studies of Science* 37, no. 1: 7–26.

Ellis, Ryan. 2020. *Letters, Power Lines, and Other Dangerous Things: The Politics of Infrastructure Security*. Cambridge, MA: MIT Press.

Fisch, Michael. 2018. *An Anthropology of the Machine: Tokyo's Commuter Train Network*. Chicago and London: University of Chicago Press.

Garfinkel, Harold. 1991. *Studies in Ethnomethodology*. Cambridge: Polity.

Gillespie, Tarleton. 2010. "The Politics of 'Platforms.'" *New Media & Society* 12, no. 3: 347–64.

Goffman, Erving. 1959. *The Presentation of Self in Everyday Life*. New York: Anchor.

Goodwin, Charles. 1994. "Professional Vision." *American Anthropologist* 96, no. 3: 606–33.

Grommé, Francisca. 2015. "Turning Aggression into an Object of Intervention: Tinkering in a Crime Control Pilot Study." *Science as Culture* 24, no. 2: 227–47.

Gutierrez, Steven. 2016. "How Transport for London (TfL) Meets the Social CS Demands of London's Commuters." Personal communication, April 13.

Haraway, Donna Jeanne. 1997. *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience*. New York: Routledge.

Latour, Bruno. 1988. *The Pasteurization of France*. Cambridge, MA: Harvard University Press.

Latour, Bruno. 1996. *Aramis, or the Love of Technology*. Cambridge, MA: Harvard University Press.

Marres, Noortje, and Linsey McGoey. 2012. "Experimental Failure: Notes on the Limits of the Performativity of Markets." Working paper. Accessed February 6, 2022. http://research.gold.ac.uk/7353/

Michael, Mike. 2016. *Actor Network Theory: Trials, Trails and Translations*. Thousand Oaks, CA: SAGE.

Miyazaki, Hirokazu, and Annelise Riles. 2008. "Failure as an Endpoint." In *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems*, edited by Aihwa Ong and Stephen J. Collier, 320–31. Malden, MA, and Oxford: Wiley-Blackwell.

Mol, Annemarie. 2003. *The Body Multiple: Ontology in Medical Practice*. Durham: Duke University Press.

Neyland, Daniel. 2016. "Bearing Account-Able Witness to the Ethical Algorithmic System." *Science, Technology, & Human Values* 41, no. 1: 50–76.

Neyland, Daniel. 2019. *The Everyday Life of an Algorithm*. Cham, Switzerland: Palgrave Macmillan.

Neyland, Daniel, and Catelijne Coopmans. 2014. "Visual Accountability." *The Sociological Review* 62, no. 1: 1–23.

Perriam, Jessamy. 2018. "Theatres of Failure: Digital Demonstrations of Disruption in Everyday Life." PhD diss., *Goldsmiths*, University of London. Accessed February 22, 2022. http://research.gold.ac.uk/23312/

Perrow, Charles. 1984. *Normal Accidents: Living with High-Risk Technologies*. New York: Basic Books.

Pinch, Trevor. 1993. "'Testing – One, Two, Three . . . Testing!': Toward a Sociology of Testing." *Science, Technology & Human Values* 18, no. 1: 25–41.

Shapin, Steven, and Simon Schaffer. 1989. *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life*. Princeton and Oxford: Princeton University Press.

Simakova, Elena. 2010. "RFID 'Theatre of the Proof': Product Launch and Technology Demonstration as Corporate Practices." *Social Studies of Science* 40, no. 4: 549–76.

Smith, Wally. 2009. "Theatre of Use A Frame Analysis of Information Technology Demonstrations." *Social Studies of Science* 39, no. 3: 449–80.

Star, Susan Leigh. 1999. "The Ethnography of Infrastructure." *American Behavioral Scientist* 43, no. 3: 377–91.

"Stories of Failure – Fuckup Nights Global Movement." n.d. Fuckup Nights. Accessed February 23, 2021. www.fuckupnights.com/

Suchman, Lucy. 1997. "Centers of Coordination: A Case and Some Themes." In *Discourse, Tools and Reasoning*, edited by Lauren B. Resnick, Roger Säljö, Clotilde Pontecorvo, and Barbara Burge, 41–62. Berlin and Heidelberg: Springer Berlin Heidelberg. http://link.springer.com/10.1007/978-3-662-03362-3_3

Suchman, Lucy. 2006. *Human-Machine Reconfigurations: Plans and Situated Actions*. 2nd edition. Cambridge and New York: Cambridge University Press.