



# Disaster, facial recognition technology, and the problem of the corpse

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## Abstract

The overlapping disasters of the Australian 2019–2020 bushfire season and the COVID-19 pandemic, figured alongside the imaginary of projected future disasters, have provided a space of legitimation to experiment with controversial facial recognition technologies (FRTs). Drawing upon interviews conducted with senior Australian government administrators and researchers, I argue that FRTs are being used to respond to the trauma of disaster through its novel mediation and refiguration, tied to discourses of resilience which have been used to justify the expansion of FRT as a means for relief and the provision of aid. This legitimation, however, is challenged by the difficulty FRT encounters in capturing the face in its vital and its mortal malleability. What I term ‘the problem of the corpse’ serves to bring to light the ‘paranoid’ gaze of the biometric apparatus, disrupting the aim of using biometric infrastructure to produce a ‘new normal’ in the ongoing aftermath of disaster.

## Keywords

Biometrics, climate change, COVID-19, death, disaster, facial recognition technology, normality, quarantine, resilience, spoofing

In the summer of 2020, Australia was hit by two successive (indeed, overlapping) disasters. The Black Summer ‘megafire’ of 2019–2020 was one of the most destructive natural disasters on record. The fires led directly to the deaths of 34 people, indirectly to the deaths of 445 people, and killed an estimated 3 billion vertebrates across 60 million acres

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of burned land. The megafire peaked during December 2019 and January 2020, before being extinguished in March 2020. In the same month, a state of emergency was declared across most Australian states regarding COVID-19, which at the time of writing has led to the deaths of over 18,000 Australians, and nearly 7 million people globally.

In a recent series of commentaries the historian of normality Elizabeth Stephens (2020, 2021; see also Cryle and Stephens, 2017), has analysed the profoundly dislocating quality that the cascading disasters of recent years have had on the experience of everyday life:

As so many across the world found their lives knocked off-kilter, forced to adjust to new lives as full-time inter-nauts pinwheeling through a virtual deep space of online meetings and classes, it became clear that the pandemic had produced a crisis not just in public health but in our very capacity to make sense of the world. The pandemic, then, must be approached as an experience as well as an event. This experience is one characterised for many by a pervasive and widely shared sense of strangeness, a much-remarked awareness of its lack of historical precedence, which has thrown not just ordinary life but the very idea of the ordinary into deep crisis. (Stephens, 2020: 93)

In the face of this loss of the sense of ‘the normal’, Australians (like many others around the world), have been told that they must adapt to ‘the new normal’. This ‘new normal’ would constitute the development of ‘resilient’ strategies for responding to the awful novelty of a post-megafire and post-COVID world, as well as a world defined by the ongoing catastrophe of climate change. ‘Resilience’ names both a discourse of governmentality (Foucault, 2008), as well as its corresponding mode of subjectivation. As a mode of governmentality ‘resilience’ describes ‘a systematic, widespread, organizational, structural and personal strengthening of subjective and material arrangements so as to be better able to anticipate and tolerate disturbances in complex worlds without collapse, to withstand shocks, and to rebuild as necessary’ (Lentzos and Rose, 2009: 243). At the level of subjectivation, this entails the promotion of strategies for coping with and responding to situations of inevitable danger and loss, especially through the ‘valorization of individuals as managers of their own risks; and a shift in the role of expertise from that of assuming technocratic responsibility to that of “empowerment” and “support”’ (O’Malley, 2010: 413).

As Martin French and Torin Monahan (2020) note, ‘scholars of surveillance well know [that] states of exception go hand in hand with the deployment of extraordinary control measures and practices designed to intensify the [surveillant] gaze’ (p. 2), a dynamic that they note has only been further reiterated during recent rounds of disaster and crisis (see also Yang et al., 2021). It is well in keeping with this dynamic that the Australian state has taken the ‘opportunity’ of the 2019–2020 megafires, and the ongoing COVID-19 pandemic to experiment with the introduction of a controversial biometric technology as an element of disaster response infrastructure, both in the present, and as a preemptive measure to prepare for and mitigate expected future disasters. The significance of trauma as a problem to be overcome and dissimulated through this infrastructure corresponds to what O’Malley and other researchers have understood as the imperative towards ‘empowerment’ and ‘support’ within a mode of governmentality organized around the discourse of ‘resilience’. This is a discourse which strives to

produce subjects capable of living productively or at the very least able to 'cope' amid the 'strangeness' of a world defined by disaster, and in which learning to live with the 'new normal' becomes an injunction.

It is within this context that the Australian government has started to seriously put to the test the facial recognition technology (FRT) infrastructure it has been developing over the last decade or so. The Australian government has invested heavily in FRT as a core component of government infrastructure in the 21st century. The national facial recognition database has collated and is collating biometric data from a range of state and federal databases, including driver licences and passport photos. Many tens or possibly hundreds of millions of dollars have been spent establishing what is sometimes referred to as 'the Capability' (Marks, 2020). The exact amount is difficult to establish – and is indeed an ongoing project spread across multiple government tenders, agencies, and corporate providers. It is envisaged that the Capability will be used to authenticate Australian citizens' identities and coordinate access to a wide range of government services, such as tax services and social security payments, including, as shall be described in more detail later in this article, disaster relief payments.

However, the enabling legislation for the Capability has not yet been passed. The last time that the government tried to pass this enabling legislation, with the 2019 *Identity-Matching Services Bill*, a bipartisan parliamentary joint committee on intelligence and security decided, after 18 months of scrutiny, that the bill was dangerously vague, with insufficient privacy and transparency safeguards (see Goldenfein and Mann, 2020). Perhaps due to this official deferral of the question of legislative safeguards on the use of FRTs, there has been in Australia little of the kind of public scrutiny and agitation around the government use of FRT that has been the norm elsewhere (see Barrett, 2020; Buolamwini and Gebru, 2018; Stark and Hutson, 2022). At the same time, recent reporting by the consumer rights magazine *Choice* on the use of FRT in supermarkets and department stores has drawn heated public reaction – the investigation found that several large commercial retailers had used FRTs to track the movements of customers without meaningfully informing them of the fact (see Pereira, 2022; Taylor, 2022). This would suggest that the relatively low degree of public scrutiny around the use of FRT in Australia is contingent upon an understanding of the status quo around FRT as itself deferred, rather than settled. Although there is a broad bipartisan consensus around the 'need' for FRT as an element of Australian social infrastructure – neither of the Australian major parties have made any serious attempt at opposing its development – at the same time, there appears little appetite to make a political case for its introduction.

In this article, I will consider three case studies, from before the pandemic, during the pandemic, and within the imaginary of the post-pandemic, to consider how FRT is intervening within the contemporary governance of life itself. I will analyse the way that FRT has been drawn on by Services Australia as a form of experimental disaster response during the 2019–2020 megafires, as incorporated within home quarantine apps during the COVID-19 pandemic, and as the subject of experimental research in the use of FRT for Disaster Victim Identification (DVI). I draw upon data from interviews conducted with three senior staff at Services Australia (formerly known as the Australian Department of Social Security) who were involved in the development and deployment of FRT during the department's response to the 2019–2020 megafires, as well as with three senior

staff at the Victorian Institute of Forensic Medicine and at the Defence Science and Technology Group (a research agency within the Australian Department of Defence), who are researching the use of FRT as a mode of DVI. All staff spoke in an individual capacity, and their perspectives should not be understood to constitute the official position of their departments. I combine this interview data with a critical analysis of policy documents, royal commission transcripts, app store reviews, and technical literature, in order to situate how FRT is figured as a component of the contemporary technics of governance.

I argue that FRT is being used to extend the capacity of the state to respond to a world increasingly defined by the challenge of various intersecting modes of disaster, as well as being used to in a sense ‘automate’ the traumatic experience of disaster itself. That is, I find that FRTs are promoted by government officials as a means by which the horror of disaster is mitigated or bypassed – for example, by making it unnecessary for family members to identify the remains of a loved one, or by providing a biometrically ‘verified’ record of the experience of disaster, which could be used to access disaster relief payments without having to repeat the traumatic narrative of a disaster experience multiple times. At the same time, while the use of FRTs has been at least partly ‘successful’ within the context of the response to the 2019–2020 megafires, I also find that the way that the FRT apparatus figures the ‘liveness’ of the surveillant subject reveals its own function in an uncanny way.

FRTs are unsettled by what I term here ‘the problem of the corpse’. The paranoid gaze of FRT is troubled by the possibility that users are not who they say they are, or indeed are not anyone at all. So-called ‘liveness detection’ tests are used as a part of the biometric apparatus to ensure that the user is a living, breathing person, as opposed to a ‘dead’ photograph or a deepfaked video portrait. However, the technical measures the FRT apparatus uses to verify this ‘liveness’ reveal the operation of the technology in an often frustrating and disruptive way. Conversely, technologies of post-mortem facial identification are troubled by the uncanny vitality of dead faces. Researchers are grappling with the technical difficulty of tracking and modelling the ‘liveliness’ of decomposition rates in different parts of the face and in different environmental milieux, and with comparing the uniform poses of pre-death identification photographs with the highly irregular and unpredictable poses of the corpse. FRTs figure the face as something which is suspiciously mortified when alive, and disturbingly lively when dead. It is this problem which both provides the grounds for new developments and experiments in the development of FRT, while at the same time disrupting the very sense of normality the technology is called upon to secure.

## **2019–2020 face verification service trial – the test of the megafires**

During the 2019–2020 megafires, Services Australia (SA) took the opportunity to test a pilot of the Face Verification Service (FVS). Services Australia is the Australian Commonwealth agency responsible for the administration of social security payments, including disaster relief payments. The trial involved the establishment of an experimental interface between the Department of Home Affairs (which had formal authority over

the Facial Recognition capability) and SA as the agency responsible for providing relief payments. This portal enabled SA staff to capture biometric images of those applying for disaster relief payments (through either webcams or mobile devices [interview with SA staff, 2021]) and to verify their biometric data against either passport photos, visa photos or in Victoria and South Australia, driver licence photos (due to arrangements made with the state governments in these states; see Lees, in *Royal Commission into National Natural Disaster Arrangements*, 2020b: 498).

The use of the FVS was promoted as a way of providing disaster aid to people who had lost their identity documents during the bushfires, and so would have struggled to verify their identities through traditional routes. Indeed, during the *Royal Commission into the National Natural Disaster Arrangements*, which examined and evaluated the government's response to the bushfires, one witness who had lost their home described their struggle to access disaster relief payments in the absence of identifying documentation:

And I spoke to a person on the phone from the Red Cross saying, 'This is ridiculous. You know, your house is burning down, the last thing you think about grabbing is a utilities bill'. And they got really annoyed with me and it wasn't a pleasant conversation. (Townsend, in *Royal Commission into National Natural Disaster Arrangements*, 2020a: 11)

Beyond the capacity to verify the identities of aid recipients in the absence of identity documents, the use of the platform was justified as enabling a 'No wrong door and one stop shop' principle, described by Coordinator of the National Bushfire Recovery Agency (NBRA) Andrew Colvin as the 'ideal that a victim of a bushfire only ever needs to talk to one person and tell their story once, because every time they have to tell their story we're effectively retraumatise that individual' (Colvin, in *Royal Commission into National Natural Disaster Arrangements*, 2020b: 521). The 'no wrong door' terminology is adopted from a policy implemented in the United States as part of the *Affordable Care Act* (2010) and designed to enable an 'enrolment superhighway' – the easy enrolment of users into multiple public health programmes through one 'horizontally integrated' enrolment platform (Weiss and Grossmann, 2011). It was foreseen then that the capacity to automate the recognition of disaster victims and to organize this information in a coordinated database would in turn diminish the experience of trauma related to the disasters, since those applying for aid would not be required to redescribe and reidentify themselves to different agencies throughout the disaster recovery process.

The trial had been mooted prior to the megafires disaster, but the scope of the megafires appears to have increased both its ambit and its significance. Moreover, the then-Attorney General Christian Porter declared a national state of emergency in the wake of the fires, putting in place a suspension of elements of the *Privacy Act* which enabled 'agencies and organisations to collect, use and disclose personal information about an individual impacted by the bushfires for several permitted purposes that may not otherwise be allowed' (Office of the Australian Information Commissioner (OAIC), 2021). This specifically allowed SA to share information with the Red Cross (as a non-governmental agency) to facilitate disaster payments, although it is unclear if this involved the sharing of biometric information per se (see Colvin, in *Royal Commission into National Natural Disaster Arrangements*, 2020b: 527).

The technical infrastructure developed by SA and the NBRA was generally regarded within these agencies as a highly successful element of the bushfire recovery process – this assessment predominated both during the Royal Commission, as well in interviews with senior staff at SA. The staff I interviewed reported that the accuracy of the system was considered acceptably high. Staff also asserted that only a very few of those approached to participate in the trial had chosen to opt out (although it is notable that, in one interviewees' words 'the ones that didn't consent were those that probably knew a little bit more about the technical level of the technology and had been educated from mainstream media'). There has been no publicly available audit of the system's performance, and so it is not possible to independently evaluate these claims.

Coordinator Colvin noted in the Royal Commission that the 'efficiencies of technology' established by the NBRA and the SA had 'utilities beyond the bushfire event' which '[he] would hate to see lost going forward' (see Colvin in Royal Commission into National Natural Disaster Arrangements, 2020b: 524), an assessment that was echoed in interviews with SA staff. One SA administrator described what they saw as the potential to incorporate FRT systems in future iterations of welfare infrastructure:

I think the benefits of this technology moving forward is those circumstances that we've demonstrated already through the bushfires. Someone in an emergency situation, someone fleeing domestic violence, someone that's just been made homeless, young children or young teens that don't have access to their identity documents because they've fled their home, coming in for support . . .

It is clear then that the trial of the FRT capability during the 2019–2020 megafires was legitimized and celebrated according to two criteria. On one hand, its 'efficiencies' helped the Australian state to reestablish order and oversight during a disaster situation in which the normal functioning of the state was otherwise stressed or overcapacity. The use of FRT helped to streamline the government's disaster relief strategy, enabling an easy 'enrolment' and verification of the status of disaster victims. At the same time, the technology promised to, at least to some degree, mitigate the experience of the *trauma* of the megafire disaster itself. In the chaotic aftermath of the fires, those who suffered the loss of crucial personal documentation faced further distress in attempting to access disaster relief through the 'retraumatizing' retelling of their experience, and the FRT apparatus was understood as having a kind of quasi-therapeutic quality both for these, and for potential future victims. This is in keeping with what O'Malley (2010) describes as a new orthodoxy around the management of trauma in an age of resilience, namely that it is best for authorities to focus on empowering the individual to let their 'natural' capacity for resilience come to the fore (see Shephard, 2004). This twin justification will, as we shall see, continue to resonate with and justify the expansion of the FRT apparatus as an element of Australian disaster infrastructure.

## Paranoid FRT and 'liveness detection'

As noted, the disasters of the 2019–2020 megafires and the COVID-19 pandemic overlapped. In March 2020, as the seriousness of the COVID-19 pandemic became apparent, a 'National Cabinet' was formed, uniting the Prime Minister of Australia with the premiers and first ministers of the Australian states and territories in order to coordinate

public health policy. Australia is a federated commonwealth of states and territories, and while much of the funding for public health infrastructure is provided by the federal government, the states and territories hold broad discretionary powers around the development and implementation of (public) health policy. While all Australian states and territories placed restrictions on interstate travel in the early part of the pandemic, each have 'opened up' to domestic and international travel at different rates and with different arrangements (see Moloney and Moloney, 2020).

The states of South Australia and Western Australia were especially reluctant to 'open their borders'. These states had enjoyed a relatively high degree of success in keeping infection rates low by comparison with the more densely populated states along the eastern coast of Australia, especially New South Wales and Victoria. When South Australia and Western Australia did start opening the borders, it was only under strict conditions for incoming travellers, who were required to spend a 14-day period of quarantine inside designated 'medi-hotels', paid for at their own expense. Moreover, if incoming travellers quarantined in a group (such as with other members of their family), and any member of the group developed symptoms of COVID during the quarantine period, all members of the party would be required to spend a further 14 days in isolation within the hotel. This provided an obvious boon to the hotels industry, who celebrated the policy – the otherwise mothballed facilities were the 'unsung heroes' of the pandemic according to the Western Australian head of the Australian Hotels Association (Law, 2022). But the policy placed an onerous cost on travellers, both in terms of expense and of stress. Newspaper coverage of the medi-hotels focussed on the anguish of 'families ripped apart' and the mental strain triggered by hotel quarantine 'imprisonments' (see Sulda, 2021). Moreover, both states struggled to find adequate capacity, both in the number of rooms and the number of staff available, even with heavy restrictions on the number and type of travellers allowed to enter the state (Zimmerman, 2022).

It was in this context that first South Australia, then Western Australia, and later the Northern Territory, introduced home quarantine for vaccinated travellers, facilitated by a 'live face check in' app. In South Australia, the 'HealthCheck SA app' was trialled in September 2021 and made mandatory in November 2021 – those in home quarantine had to 'check in' by scanning their face using the app three times a day, which would record geolocate data as 'proof' that the respondent was at home when the 'check in' was made. In Western Australia, as well as in the Northern Territory, a similar app and protocol was put in place, called 'G2G Now'.

The apps were criticized as an insidious breach of the right to privacy (Bourke, 2022) as well as being plagued by glitches – one app store reviewer described the G2G Now app as having 'more bugs than a roach infestation' (Juanola, 2021). However, despite these criticisms, there was apparently no widespread rejection of the apps, or any concerted political opposition to their use. The grudging acceptance of the home quarantine app is well expressed in the following (four star) review left on the App store page for the HealthCheck SA app:

Better than a Medi Hotel

Would pretty much do anything if it meant not having to be locked up in medi hotel for two weeks

Some frustrations with the app

- the colour flashing when your face is being scanned. What's the point of this?
- the cartoon effect of when your face is being scanned.
- facial recognition is near impossible if outside playing with children
- often takes multiple attempts to scan face.
- not sure what the app is comparing my face scans too as I've not provided proof of id with a photo
- should be a notification at the 10 and 5 minute mark if not checked in [sic] (Tomjif21, 2021)

There are several interesting points to be drawn from this review. One is to note that, as with the use of facial recognition in the bushfire response, the benefit of FRT is again framed as lessening or in some sense 'automating' the stress and trauma of the disaster situation. Of course the trauma faced by bushfire victims who have lost possessions and identity documents is not commensurate with the stress of having to stay in a medi-hotel for a 2-week quarantine period. Nevertheless, it is striking that in both cases, the benefit is understood as 'easing' the experience of an extraordinary, and stress-inducing situation. The direct intervention of the state in imposing 'imprisonment' in the medi-hotel is replaced by the comparatively less onerous self-management of home quarantine, even if this still amounts to a form of home detention.

A second point to note is that the 'bugginess' of the app is not simply experienced through frustration with its failure to work seamlessly, but with the way the app exposes its own seams through its malfunction. In particular, the reviewer notes their irritation with their phone 'colour flashing' while their face is being scanned. The 'point' of this is, in all likelihood, that this is how the 'liveness detection' aspect of the app works. 'Liveness detection' is a crucial aspect of FRT – it is a response to one of the most serious security risks of FRTs, what are termed 'presentation attacks' (see Mungovan, 2021). 'Presentation attacks' occur when a malicious actor attempts to simulate the face of a different user. FRT systems without a 'liveness detection' component are vulnerable to several different types of presentation attack. Early FRT systems were able to be duped simply by holding up a photograph of another user (see Fourati et al., 2020) – in response to this kind of attack, later FRT systems have been designed to detect movement and depth in the presentation of a user seeking authentication (see Bud, 2018). Of particular concern are so-called 'video injection attacks', in which an attacker might use a machine vision algorithm to 'morph' their face into that of a targeted user and 'inject' this video presentation directly into the feed of an FRT platform, thus bypassing presentation attack detection measures (see Carta et al., 2022).

The Australian government has for the federal Capability contracted the British firm iProov to provide its liveness detection solution – other clients of iProov include the British Home Office, the US Department of Homeland Security, and the Singaporean Government (Burt, 2021). iProov's (2020) 'Flashmark' system of liveness detection



works by 'creating a "one-time biometric" . . . projecting a cryptographic sequence of colors from the device screen onto the user's face for a few seconds, the face imagery is stamped with a one-time code'. That is, this form of liveness detection works by 'stamping' the face of the user with a one-time 'code' of a particular array of flashing coloured lights, which mark the contours of the user's face in a way that should, at least in theory, be able to detect even sophisticated deepfake techniques for 'spoofing' the biometric system.

However, this is a mode of 'liveness detection' which, very literally, leaves its mark, through the irritating pulses of coloured light, through the uncanny feeling this produces in front of the apparatus, through the need to repeat the scanning process over 'multiple attempts'. The sense of ease and comfort within the home which the system is designed to promote is disrupted, and the terms of the quarantine monitoring are made present in an uncomfortable way. As Louise Amoore (2020) argues, these moments, when the 'errancy' of forms of algorithmic decision making make themselves present, provide a privileged glimpse into the functions of algorithmic power – it is in this 'moment when algorithms give accounts of themselves' (p. 110). What Amoore terms the 'madness of algorithms' is at play here in the FRT apparatus' paranoid attempt to read the 'liveness' of the face, a paranoia which surfaces to disrupt the smooth and orderly processing of biometric data that the FRT apparatus promises.

Drawing upon Amoore's account, Kristina Grünberg (2021, 2022) has argued that it is this disrupting quality which is in a certain sense 'the point' of such security measures – it is hardly clear for example that there are any actual criminal actors active in the world deploying the kind of sophisticated video manipulation techniques against biometric authentication tools that these systems are designed to prevent, let alone citizens of Perth and Adelaide undergoing home quarantine orders. Grünberg argues that research into FRT spoofing produces an algorithmic 'trap' in which the spoofing imaginaries of researchers serve to constantly subvert their own designs, thus legitimating the constant need to innovate to protect against new imagined threats.

## **Facial recognition technology and disaster victim identification**

Meanwhile, researchers in Australia are currently attempting to develop means of comparing post-mortem with ante-mortem (before-death) images of people. This work is being conducted in anticipation of the work of mass disaster victim identification in the aftermath of future floods, or bushfires, or tsunamis – all the once in a 1000-year 'natural' disasters which are forecast to only become more and more frequent occurrences in a century defined by the cataclysm of anthropogenic climate change (see Mallett and Evison, 2017).

In Australia, much of this work is being conducted at the so-called 'body farm' which has been established by the University of Technology Sydney at Yarramundi, at the foot of the Blue Mountains. Because the term 'body farm' is understood to promote a sensationalized understanding of the practice of forensic archaeology, the term is generally avoided by practitioners (see Williams et al., 2019). The UTS institute's formal name is

the Australian Facility for Taphonomic Experimental Research, or AFTER – taphonomics meaning in this context the study of organic post-mortem decay. The facility relies on people donating their body to the cause of science – rather than having their refrigerated cadaver dissected by anatomists or students, the bodies at AFTER are left to decompose in the open air, to study what the environmental effects of the south-eastern Australian climate have on the process of decomposition.

The establishment of the AFTER facility in 2016 took place in the aftermath of a nexus of several disasters in Australia and the Asia-Pacific region, including the 2002 Bali Bombings, the 2004 Indian Ocean Earthquake and Tsunami, and the 2009 ‘Black Saturday’ bushfires (see Mallett and Evison, 2017). All of these events provided novel challenges in the development of appropriate techniques for ‘Disaster Victim Identification’ (DVI), the work of identifying large numbers of victims in the aftermath of what are referred to as ‘Mass Fatality Incidents’ (MFIs; see Brough et al., 2015). In interviews conducted with researchers at forensic institutes working on the use of FRT in post-mortem identification, the 2004 Indian Ocean disaster (often referred to as the ‘Boxing Day tsunami’) was noted as an especially significant episode, both in terms of issues of the accuracy of established methods, as well as with regard to the question of the trauma of surviving family members and friends. Two researchers I interviewed were involved in the response to the Indian Ocean earthquake in Thailand. As one remembered, the chaotic response to the devastating tsunami which followed the earthquake had an especially profound effect upon the work of DVI:

I worked in the Bali bombings, I worked in the Thailand tsunami, and I ran the ID scenario for the Black Saturday bushfires. And in Thailand in particular, they just put photographs of all these drowned, swollen, decomposed bodies up all over walls, hundreds and thousands of them, and relatives just walked up and down trying to pick which one was their relative . . . So, errors get made on quite a regular basis, and if you get one wrong, you’ve immediately got two wrong straight away.

A similar point is made by another researcher with similar MFI experience, describing the impetus for automating the process of DVI:

Why would you put families through that? [Especially] if there’s other options as well, or get the family to provide you with an image or – there’s a lot of different options you can use, and face images are a lot more readily available, and passport and driver licences and people posting on social media. So if a bomb explodes in an area and you’ve got all these people who have tagged themselves in a tourist area could you use that data? Things that might exist to make things a lot quicker. So it’s just understanding if we did things differently could we make it more effective and quicker, I guess is what I’m interested in working out.

While in the United States, there are now at least seven taphonomic research institutes, AFTER is the first such facility to be established in the Southern Hemisphere (and was indeed the first outside the United States). This is significant due to the differences in milieu between, for example, the dry temperate climate of the Blue Mountains region and, to take one example, the humid, subtropical conditions around Knoxville, Tennessee, site of the oldest and perhaps the most famous such facility, the Forensic Anthropology

Centre. These different milieux produce significant differences in the 'style' of decomposition observed, and hence, the limited applicability of observations derived at one experimental site in comparison with another. Indeed, the studies conducted at AFTER have made some remarkable, 'world-first' findings, including that, at least in South Eastern Australian bushland, the body 'moves' to a much greater degree post-mortem than had been previously suspected. One study conducted at AFTER, for example, used time-lapse images to monitor a decomposing body over the course of 16 months, producing the 'surprising finding . . . that post-mortem movement occurs in the advanced decomposition stage, with the lower limbs being the most active' (Wilson et al., 2020: 248; see also Lamerton et al., 2023).

Modelling and predicting this sort of 'surprising movement' is a problem for FRT-enabled analysis as well. The post-mortem face is a problem for FRT algorithms in part because the decomposition process is very hard to model – decomposition both distorts biometric data as well as introducing significant gaps and noise into the image of the face as a data source. At the same time, the face of the corpse has a tendency towards 'recalcitrance' (see O'Neill et al., 2022: 259). One researcher described the difficulty in processing the 'uncontrolled' data of post-mortem photography:

So for example a lot of the faces that can't enrol are because the eyes are closed and the mouth is open, which is different to what facial recognition technology is usually about and used to, which is eyes open, mouth closed.

That is, while ante-mortem facial biometric images have a clearly defined standard shot – neutral facial expression, mouth closed, eyes open – corpses tend to set their face in quite a different way, often with eyes closed, and mouth open, and with a great variety of expressions, making comparisons between ante and post-mortem datasets very difficult.

## The problem of the corpse

It is striking that especially in the final two 'use cases' examined here – the use of FRT in home detention and its prospective use in future mass DVI scenarios – the FRT apparatus is troubled and undermined by the very problem of loss itself, as both a technical and a phenomenological concern. In the case of home quarantine, what I term the 'paranoia' of the biometric gaze makes itself present – in the app's glitches, in its irritating coloured lights, which attempt to 'stamp' the face of an enrolled subject with a one-time code in order to prove its 'liveness' each time it is called to enrol itself. The convenience, the sense of ease with which this app is designed to encourage is disrupted and undermined – the user becomes instead uncannily aware of a new kind of strangeness in the peculiar mode of 'recognition' facial recognition entails.

FRT is here confronted by what we might term the 'problem of the corpse'. For classical photography, the corpse was in a certain sense the ideal subject. As John Troyer (2021: 9) argues in his *Technologies of the Human Corpse*, 'The human corpse was . . . the perfect subject for early photography since it lacked any bodily movement'; he describes how for early photographers 'the visual index mechanically produced by

photographers created a profoundly new way of seeing the dead body for the general public', making death something fixable, graspable, perceptible, free from rot or degradation, producing a new mode of 'embalmed vision'. To be sure, this 'fixity' of the photographed corpse was never itself entirely 'assured'. In *Camera Lucida*, Roland Barthes famously describes the ambivalent relation between the camera and the corpse – he describes photographers as 'agents of death', casting the living into frozen *memento mori*, while at the same time reflecting on the photography of corpses themselves that

If the photograph then becomes horrible, it is because it certifies, so to speak, that the corpse is alive, as *corpse*: it is the living image of a dead thing. For the photograph's immobility is somehow the result of a perverse confusion between two concepts: the Real and the Live: by attesting that the object has been real, the photograph surreptitiously induces belief that it is alive, because of that delusion which makes us attribute to Reality an absolutely superior, somehow eternal value; but by shifting this reality to the past ('this-has-been'), the photograph suggests that it is already dead. (Barthes, 1980: 78–79)

FRT intensifies the 'confusion' engendered by the image of the corpse, the problem that 'these shadows cannot be secured' (Schwenger, 2000: 412). For FRT, the subject is presumed dead until it can convincingly prove its 'liveness', even as the 'actual' corpse presents a corollary problem, that it remains uncannily 'lively' in its decomposition and in its post-mortem gestures.

Critical commentary of FRTs has often drawn attention to the way that their striving for control through visualization conflicts dangerously with their propensity for error, and the consequences that these errors have especially for marginalized populations and non-normative bodies (e.g. in the misidentification of criminal suspects; see Gates, 2011; Jacobsen, 2021; Magnet, 2011; Shaikh and Moran, 2022). Ruha Benjamin (2019: 124) has argued that such errors produce a kind of double bind, insofar as the 'correction' of these mistakes may only expose those being discriminated against to further harm through their more 'accurate' capture within the gaze of violent state structures. Theorists like Zach Blas (2013) have called for modes of tactical resistance to the biometric gaze which would promote 'illegibility', 'against standardization and state-based forms of inclusion and exclusion, [for an] escape into something else beyond legal recognition and identification' (see also Kazansky and Milan, 2021: 373–376).

In the case studies examined here, the spectral quality of the trace produced by the 'corpse' serves to complicate the 'positive' project of state biometrics, legitimated in these case studies by an appeal to produce a 'new normal' and to mitigate the experience of trauma in the wake of disaster. At the same time, the uncanny quality of the corpse produces a technical problem that does not so much provide a form of 'escape', but which technicians and administrators must 'work through' in order to operationalize FRT as an element of the state apparatus. This complicates both the legitimizing discourse of FRT as well as forms of critique predicated upon modes of illegibility and escape. The problem of the corpse is that it is never finally at rest in the biometric trace. In grappling with this problem, technicians and administrators are compelled to account for the illegibility of the biometric apparatus. Rather than escape, the modelling of this illegibility


becomes a crucial element in the production of the 'new normal' – a way of making manageable or even banal, the project of governance amid situations of prolonged and overlapping disaster, destruction and loss.

The Australian government has invested heavily in FRT as a technology which can be used to produce a 'new normal' in the wake of the dislocating and traumatizing event of disaster, and indeed as a means to the cultivation of a resilient subjectivity in a reality where disaster itself becomes the new normal. And yet, the operation of FRT again and again reveals its own uncanny nature, in a way which disturbs and undoes this normalizing function. The figure of the corpse operates here as an index of the 'rupture' which FRTs promise to suture. The impossibility of this promise – to produce a record of the corpse which would be 'continuous' with the life of the biopolitical subject – both troubles and propels the biometric apparatus, serving to legitimate its function as a salve for the trauma of disaster, while justifying endless recalibrations and technical supplements. If the Australian public has apparently grudgingly accepted the use of FRT during the extraordinary conditions of the response to the 2019–2020 megafires and the subsequent COVID-19 restrictions, it remains to be seen whether this acceptance will be extended within the conditions of the 'normal disaster' which will structure an era of ongoing and intensifying anthropogenic climate change.

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