

The ‘key’ to the crime: Criminal cases and the projection of expectations about forensic DNA technologies in the Portuguese press

Filipe Santos

Introduction

DNA technologies have been at the forefront of a renewed enthusiasm surrounding forensic science and its promises and expectations for crime fighting.¹ In the early 2000s, Portugal was starting to discuss the possibility of building a universal DNA database.² However, considering the threats to individual rights and civil liberties that this implied, the adopted legislation in 2008 would become one of the most restrictive in the European Union.³

In parallel to the discussions regarding the use of DNA technologies for forensic purposes in Portugal, forensic science started to be featured in the coverage of criminal cases in the Portuguese media. In this sense, newspapers became a source for understanding how representations about forensic science could be constructed and be made accessible to lay audiences, particularly in terms of its promises and potential for solving crimes. The choice to study mediated criminal cases has to do with their potential to endure in the collective memory⁴ and, thus, to shape the public representations of forensic science, crime and justice, but also citizens’ understanding and acceptance of DNA technologies in criminal investigation.⁵

This chapter is divided into two main parts. I start by exploring the cultural and historical context for the emergence of different claims surrounding the so-called ‘CSI effect’, providing context on some aspects of the Portuguese forensic culture. This first part also introduces the five criminal cases used in this study that were

selected from 1995 to 2010 based on the reported use of forensic DNA technologies, and the factors for their prolonged newsworthiness and coverage in daily newspapers.

The second part draws on extracts from the newspaper coverage of the criminal cases, exploring the senses and meanings about forensic science that are portrayed. The emerging popularity of the *CSI – Crime Scene Investigation* – series around the same time provided journalists with a sort of fictional metaphor to translate and convey to their audiences the ‘novelty’ and ‘complexity’ of forensic science that was used in the covered criminal cases.

I argue that the recurrent connotations with *CSI* generate a form of *journalist effect*, by which the fictional imagery of *CSI* influences the media’s production of representations about police work, forensic science and criminal investigation. The analysis of the news articles suggests the prevalence of two dominant types of media discourse about forensic science in general, and DNA technologies in particular: on the one hand, a more popular discourse that celebrates the potential of DNA technologies as a ‘truth machine’⁶ that explores the use of fictional metaphors to convey the idea that science can produce the desired justice; on the other hand, a more sceptical and critical discourse that ponders the actual value and relevance of forensic science against the actual forensic practices and contingencies of individual and institutional actors within the judicial system.

Both discourses can be situated within the social, geopolitical and historical positioning of Portugal in what Boaventura de Sousa Santos called ‘imagination of the centre’.⁷ This can be useful to understand how the production of collective representations about forensic science in the context of newspaper crime coverage can be framed by underlying notions of an idealised efficient and sophisticated centre, as portrayed on *CSI*.

***CSI*, its ‘effects’, and the Portuguese context**

Mediatized criminal cases usually expose the general public to the functioning of the justice system and criminal investigation, and it is possible that public representations and beliefs are constructed, at least in part, through the media’s discourses. In parallel, crime

fiction in its many shapes and formats also exposes the general public to a diversity of culturally influenced portrayals of the functioning of justice.⁸

The twenty-first century brought a new focus to the crime fiction genre, much more centred on forensic science and the apparent pervasiveness of surveillance technologies, like biometric databases, CCTV, tracking devices or facial recognition. The premiere of *CSI* in 2000 was the inception of a worldwide popularity phenomenon, which resulted in several spin-offs, with the original series running until 2015. The new 'heroes' in these stories suggest a shift in policing and crime fighting models. The cultural emphasis of the use of science and technology in fiction to fight and prevent crime is also visible in the enthusiasm with which governments and criminal justice systems have since adopted DNA profiling and databasing and other surveillance systems and infrastructures.⁹

Following the trends of the scientification of police work,¹⁰ which describes how the use of science and technology by the police enables a power source that can provide an appearance of rationalisation and legitimacy in the fulfilment of their roles, the *CSI* series can be understood in popular culture as a metaphor for scientific and technological progress, but also for the political, social and cultural developments of the early twenty-first century. The emergence and availability of new forensic technologies like DNA profiling¹¹ at the turn of the century has impacted social representations about police work, criminal justice and forensic science. As Jasanoff recalls,¹² in the USA there were several landmark criminal cases where forensic genetics and scientific credibility played a key role, prompting the 'genetic age' of forensic identification.¹³ In broad terms, *CSI* draws on these developments to render a fictional portrayal of forensic science as a sort of 'truth machine' that will use evidence, logic and reasoning to identify the real offender and exonerate the innocent.¹⁴

Fuelled by claims of the supposed impact of TV forensic science fiction on real-world beliefs, reports about a 'CSI effect' started to appear in the American media in 2002.¹⁵ In the context of an adversarial justice system, like in the USA, where the role of the judge is that of an arbitrator between the parties, and where verdicts are reached by a jury of lay citizens, it is natural to have concerns about external factors that may influence the fairness of the trial. There have been multiple academic inquiries into the phenomenon of the

CSI effect and, even if it is not new that juries in real cases may be affected by the media,¹⁶ this particular effect voices concerns of both lawyers and prosecutors surrounding forensic evidence. In short, legal actors worry that jurors may acquit when they should convict, or convict when they should acquit, due to either not enough 'scientific' evidence, or to an overestimation of expert testimonies or evidence. Simon Cole and Rachel Dioso-Villa have explored the developments of the CSI effect,¹⁷ describing a typology consisting of six 'effects' that are found in the media. Besides the supposed influence in juries, lawyers and prosecutors, the authors found claims that, because of the series, people are better prepared to understand forensic science (*producer's effect*), students are interested in enrolling in forensic science courses (*professor's version*), and that CSI can teach criminals to avoid detection (*police chief's version*), as a form of forensic awareness.¹⁸

In addition to providing a typology¹⁹ of the different claims surrounding the effect and finding that in the USA there are no higher or lower acquittal rates that could be attributed to a CSI effect, Cole and Dioso-Villa argued that, if anything, there is a CSI effect *effect*, that is, the increase of the media's discourses about the CSI effect on criminal trials.

While several empirical studies²⁰ did not find support for the idea that the fictional series influences the standard of reasonable doubt, or the expectations and attitudes of ordinary citizens serving in juries, they also focused on adversarial legal contexts, like the USA, where there is a higher probability that lay jurors may be asked to assess forensic evidence and testimonies.

In Portugal, the criminal justice system is based on the inquisitorial principle. In other words, the role of the court is to establish the material truth of the facts, in which the role of the judge is to conduct the inquiry and to ensure the impartiality and objectivity of the proceedings. In this sense, the Public Prosecution, the Judiciary Police and the forensic laboratories²¹ are all legally conceived as neutral and impartial entities working towards the common goal of establishing the truth. Law 49/2008²² defines the organisation of criminal investigation, assigning competences and coordination among police forces. The criminal investigation is carried out by the Public Prosecution, assisted by the Judiciary Police and/or other police forces, and supervised by a judge of instruction. However, as

Costa notes,²³ first responders to crime scenes, usually proximity police forces like the *Polícia de Segurança Pública* (in urban areas) or the *Guarda Nacional Republicana* (in rural areas), tend to shape the criminal narratives based on their 'selective professional vision' which may affect further developments, as other actors are called to intervene. If the case reaches trial, the judge can freely assess the credibility of witnesses and their testimonies. However, forensic examinations, technical or artistic expertise are presumed to be excluded from the free appreciation of the judge. For instance, if judges disagree with the content of a forensic report, they must provide arguments for the decision. Jury trials are rare and can only be requested by the prosecution or the defendant, in cases where the potential sentence equals eight or more years in prison.

In the Portuguese forensic culture, there is no record of public controversies over scientific credibility, which is expected in an inquisitorial system where two certified public institutions provide forensic services to the courts – the Laboratory of Scientific Police and the National Institute of Legal Medicine and Forensic Sciences. The absence of adversarial contests and the monopoly over forensic examinations reinforces the institutional objective of judicial neutrality. As argued by Costa, this culture of implicit trust and institutional neutrality can lead judges to see forensic science, and especially complex forensics like DNA analyses, as a sort of 'ready-made evidence' that can be accepted and trusted as it arrives in court as far as it stands on robust scientific authority.²⁴ Furthermore, previous studies described the Portuguese forensic culture as a 'bubble culture' or 'epistemic distancing', whereby experts seek to isolate themselves and the evidence from external contaminants, cognitive or otherwise.²⁵ In court, the experts' testimonies tend to circumvent expressions of opinion or interpretation of evidence, often stating what is written in reports. Therefore, given the relative distance of the lay public from courtroom proceedings, and the presumed neutrality of state forensic laboratories, the prosecution and the judiciary, the occurrence of the common types of CSI effects (e.g. expecting more scientific evidence or exaggerating its probative value) is unlikely to be found within the Portuguese justice system. Nevertheless, the media coverage of criminal cases may allow insights into the cultural influence of forensic science fiction, or the shaping of the CSI effect beyond the courtroom.

Criminal cases and newsworthiness factors

The analysis of crime reporting constitutes an opportunity to study the production of collective symbols, e.g. who are the heroes and the villains, through the dissemination of discourses and cultural meanings that contribute to the definition of social issues and threats to society.²⁶ Newspaper stories tend to be constructed according to frames that resonate with the audience's collective values, with the press acting as the broadcaster of dominant understandings about crime and offenders, capable of mobilising social energies in the reinforcement or change of prevailing norms and consensuses.²⁷

This chapter draws from a larger study on the uses of DNA technologies for forensic purposes in Portugal.²⁸ The selection criteria for criminal cases were ample mediatisation, that is, regular news coverage for more than one year, and the use of DNA technologies in the course of the investigation. The selected timeframe for the research was set between 1995, around the time that DNA technologies became routinely used in Portugal, and 2010, since the cases had to be closed in order to access judicial files for the start of the research in 2011. The collection of news articles in online and printed issues was as thorough as possible, from the publication of the first item until the judicial closure of the case.

The choice of four daily newspapers that maintained activity for the selected period of research is justified by the need to achieve both diversity and saturation. The four newspapers include two 'reference' or 'quality' newspapers (*Público* and *Diário de Notícias*) and two 'tabloid' or 'popular' newspapers (*Jornal de Notícias* and *Correio da Manhã*). The quality press seeks the acceptance of the public and journalist peers by privileging the production of longer news items on complex political and economic subjects of national and international scope, accompanied by in-depth expert commentary. The correct use of language and the accuracy of reporting is also a staple in this type of press.²⁹ On the other side of the axis, as Sparks³⁰ would put it, the tabloid press aims for a readership interested in daily events. The style tends to be vivid and often sensationalist, using a colloquial approach to language and impacting headlines. In this type of press, there is an abundance of

graphics and photographs, accompanied by short texts and opinion columns that often have demagogical tendencies.³¹ On this distinction, Bourdieu³² also mentions a division in the journalistic field between a 'commercial' and an 'intellectual' pole, elaborating on the differences between newspapers focused on the production of novelty and sensation and the newspapers that privilege broad commentary and in-depth analyses, while affirming the value of objectivity.³³

The selected cases stood out from daily news routine. Jewkes systematised a list of twelve factors that may configure the newsworthiness of a given crime. Some are self-explanatory and most criminal events that include one or more factors are more likely to be newsworthy. These can be immediately found in the selected cases, like *sex*, *violence*, *celebrity* or *high-status persons* and *children*. The *Meia Culpa* case (1997) was a violent attack on a nightclub that caused thirteen deaths. Its coverage had thematic ramifications into prostitution and human trafficking, as well as illegal security in nightclubs. The *Tó Jó* case (1999) refers to a crime where António Jorge stabbed his parents, killing them and making attempts to destroy the bodies. Besides the violence, this case was particularly newsworthy because of possible connections to black metal bands and satanic rituals. The case of the *Serial Killer of Santa Comba Dão* (2005) involved the disappearance and murder of three young girls over the course of one year. The perpetrator was found to be a retired police officer and a highly regarded member of the community. He was said to be very religious and an admirer of Salazar.³⁴ Both the *Joana* (2004) and the *Madeleine McCann* (2007) cases relate to small children that mysteriously disappeared in the Algarve, leaving no trace or evidence. The latter of these cases received the most media coverage, even on a global scale. This is because of the convergence and combination of several newsworthiness factors which can be used to predict which criminal cases will have more media coverage. Jewkes's list also includes *proximity* (geographical or cultural), *predictability*, *threshold*, *simplification*, *individualism*, *risk*, *conservative ideology* and *political diversion*. These newsworthiness factors, isolated or combined, can be found in the five criminal cases that were selected for the analysis described in more detail in the next section.

CSI and fictional metaphors

Even before the popularisation of forensic science fiction, there were already signs of what Shelton and colleagues called a *tech effect*.³⁵ The case that would become known as *Tó Jó* happened on 12 August 1999, coinciding with a total solar eclipse. A 23-year-old man named António Jorge (abbreviated to *Tó Jó*) who was on vacation with his wife, travelled to his parents' house in Ílhavo and stabbed both to death. There were attempts to set fire to the house and to destroy the bodies. The coincidence with the solar eclipse and the fact that the suspect played in a black metal band and was interested in satanism led the authorities to suspect that the crime involved more than one offender, possibly motivated by some sort of satanic ritual, as *Tó Jó* had friends with similar interests.

Reporting on the 1999 *Tó Jó* case, a *Público* article about the arrest of Nuno, a friend of *Tó Jó* who had recently spent a weekend at *Tó Jó*'s parents' house, expressed a tone of awe in view of the identification of the unknown element present in the blood stains found at the crime scene:

To everyone's surprise, Nuno was arrested last Friday, almost a year after the events. The DNA tests were fatal for the young man from Porto. The technical conclusions achieved by the IMLC experts corroborated some clues and provided consistency to the police's thesis. And it is certain that one of the profiles individualised by the experts from the IMLC was perfectly compatible with the young man's.³⁶

In a rarely used resort, additional DNA analyses were requested by the defence. The new examinations would acquit Nuno during trial, but this was not so prominent in the news.³⁷ Even in the earliest analysed case (*Meia Culpa*, 1997), the same newspaper includes a smaller explanatory text explaining the novelty of 'genetic fingerprinting':

Unless we have a twin sibling, there is no one else in the world that has fingerprints like ours. Similarly, each one of us has, in the big molecule of DNA that contains our hereditary patrimony, a pattern of genetic fragments that is ours and only ours – and which distinguishes us from the rest of our kin. It is this particular and personal genetic pattern that is usually called a genetic 'fingerprint'.³⁸

The *Meia Culpa* case refers to a crime that resulted in the highest ever number of mortal victims in Portugal. In April 1997, three hooded men invaded a nightclub called *Meia Culpa* in Amarante and, using a firearm to intimidate the customers and staff, poured gasoline on the furniture and set it on fire. They escaped in a stolen car that was found abandoned the following day. Because the emergency exit was blocked, the smoke and fire led to the death of twelve people at the scene, causing serious injuries in nine people, and one additional death resulting from injuries.

The underlying message from the news extract above was that these 'genetic fingerprints' could be used to identify the suspects from the balaclavas worn during the attack on the nightclub *Meia Culpa*. The following extract gives credit to the 'scientific police', highlighting the relevance and contribution of forensic science for the resolution of criminal cases:

The investigation of the '*Meia Culpa*' case was a sort of test of the Judiciary Police itself, to which it responded effectively. Despite the pressures from the public opinion and the Government, the scientific police worked over ten consecutive days and nights, in order to arrive at some important conclusions on the 12th day.³⁹

The analysis of the *Meia Culpa* case's judicial files reveals that there was much police work involved and that the analyses of the hairs found on the balaclavas were matched to only one of the suspects. The laboratory communicated with the police stating that they would compare any DNA profiles as soon as they were sent the reference profiles of any suspects, which eventually happened. The DNA reports were delivered a week before the investigation was concluded. By that time, all suspects had been quickly identified and arrested thanks to information from the mother of one of the boys who stole the car that would be used by the attackers. This information was extracted from the judicial files and had not appeared in the news. Although forensic science had made little or no contribution to finding the suspects, the established media narrative had already presented science as a determining factor for success.

The media coverage of later cases would be notoriously marked by the emerging popularity of *CSI*, which appeared as a cultural reference for a TV show and as a fictional metaphor for the expectations surrounding the role of forensic science for the

investigation of criminal cases, as a protagonist that portrays a quick, impartial and neutral justice. References to *CSI* tend to convey a scenario of sophistication and crime-solving capabilities that can sometimes overshadow traditional police investigative work. The newspapers' narratives tend to fit into a 'mediated witness'⁴⁰ model that presents a criminal case in a way that elicits emotional responses from the readers. Since narratives have to be adapted to the audiences, there is always room for excessive simplification or even distortion of the facts.⁴¹ From this perspective, it is expected that cultural references to fiction are included either as explanatory metaphors or as a way to support and lend credibility to the police's side of the story. In line with Cole and Dioso-Villa's typology, the tendency to rely on fictional and popular cultural metaphors to convey a story could be framed as a sort of *journalist effect*. The following extract from a tabloid newspaper does this in a way that glosses over the police's efforts by attributing the success to the police-scientist hybrid that is common in fictional series:⁴²

The investigation was, in fact, similar to a mix of two television series – 'CSI – Crime Scene Investigation', where the analysis of the most insignificant piece of evidence is fundamental, and 'Bones', where the analysis of corpses is a crucial element. It turns out that, during trial ..., it's not enough to have a confession, and not even the reconstitution of the homicides ...⁴³

The case that would later become known as the *Serial Killer of Santa Comba Dão* had its first occurrence on 31 May 2005, when the dead body of a young girl was found by a fisherman on the beach in Figueira da Foz. While efforts to identify the girl were still being made, two other girls were reported missing in Santa Comba Dão, about 90km from Figueira da Foz: one in November 2005, and another in May 2006. All girls had their phones turned off and there was no indication that they had plans to travel or run away. The Judiciary Police was able to identify the first girl who was a neighbour of the other two missing girls.

The case of the *Serial Killer of Santa Comba Dão* was solved thanks to the investigative and organisational capabilities of the case's investigators that discovered the associations between the disappearance of the three victims and found the traces and evidence

to confront the suspect (found to be a retired member of GNR – the Republican National Guard – a local police force in rural areas), leading to a confession and to the location of the bodies. The suspect was convicted and ordered to serve a prison sentence of 25 years, which is the maximum prison sentence in Portugal, and to pay compensation to the victims' families.

The *Joana* and *Madeleine* cases, because they involved children, were particularly newsworthy. The international scope of the *Madeleine McCann* case, in conjunction with other prominent factors, explains the different volumes of news production between these two particular cases.

The *Joana* case began on 12 September 2004, when an eight-year-old girl from a small village near Portimão, in the Algarve, was sent to the shop for some milk and canned tuna. Her mother reported to the local authorities that Joana did not come home, and searches were initiated. The Judiciary Police became involved when, reading the news about the case and watching an interview with Joana's mother on TV, the coordinating inspector began suspecting that the child had not run away, and that this could be a more serious crime that fell under the jurisdiction of the Judiciary Police. Following several questionings, Joana's mother and uncle

Table 11.1 Total news items published in the selected newspapers, related to the Joana Cipriano and Madeleine McCann cases

Newspaper	Collection dates	<i>Joana</i> case (total items)	Collection dates	<i>Madeleine McCann</i> case (total items)
<i>Público</i>	18/09/2004– 16/11/2005	32	05/05/2007– 22/07/2008	213
<i>Correio da Manhã</i>	15/09/2004– 13/11/2005	113	04/05/2007– 23/07/2008	384
<i>Jornal de Notícias</i>	17/09/2004– 12/11/2005	77	04/05/2007– 31/07/2008	380
<i>Diário de Notícias</i>	24/09/2004– 12/11/2005	78	05/05/2007– 28/07/2008	228

became official suspects for the murder of Joana. At the trial, little or no material evidence was produced. The child's body has not been found.

The disappearance of three-year-old Madeleine McCann is probably one of the most mediatised criminal cases of all time. In May 2007, a British couple was on vacation in the Algarve with their three children. They had travelled with friends and were staying in a holiday resort. On the evening of 3 May, the group of adults were having dinner at the resort's restaurant and would periodically check on the children who were sleeping in the apartments nearby. At around 22:00, Madeleine's mother discovered her daughter's disappearance. The authorities (GNR) were called in and searches for the child were initiated. One year later, and after Madeleine's parents were made official suspects, the investigation against them was closed for lack of evidence. Like in the case of Joana's disappearance, to this day no trace or evidence has been found that might explain the disappearance of Madeleine McCann.

Perhaps because of the growth of *CSI*'s popularity, but also because the investigations became immediately mediatised and there were no early results, the newspapers' coverage of the disappearances of Joana Cipriano and Madeleine McCann were strongly focused on the investigative uses of forensic science and DNA technologies in particular. In both cases, the existence of material evidence was questioned throughout the coverage and journalists had access to abundant information about the investigation. This meant that a large portion of the news articles about these cases, particularly in *Correio da Manhã*, concern searches, forensic examinations and laboratory reports, speculating about the significance for the cases' resolution.

The sensationalist style of the tabloid press underlying the coverage of the *Joana* and *Madeleine McCann* cases, influenced by the *CSI* imagery, results in a rhetoric style that places the reader as a sort of investigator of the facts, clues and evidence that are compiled throughout the inquiry, while at the same time it elicits emotional identification with the victims. This is enacted through the recurrent use of anonymous sources 'close to the investigation' and the speculations about the possible consequences for the

course of the investigation, like in the following extract about the *Madeleine McCann* case:

It is not only the fact that traces have been found that match Madeleine's DNA that leads the investigators to believe that this is a case of death. It is also the places where the traces were found ... The English dogs detected cadaver odours in the bedroom, in the boot of the car, and on the clothes that Kate [Madeleine's mother] wore that night. Then, there were traces of blood, not visible to the naked eye, that indicated the presence of the little girl behind a sofa in the bedroom and in the boot of the car rented 22 days after the disappearance [...] It was also there that the animals found biological traces of DNA that matches the English girl's and which rejects the possibility that they belong to [Madeleine's] twin siblings.⁴⁴

As illustrated by this extract, DNA technologies came to play a leading role in this sort of media crime narrative, echoing the recent fictional portrayals of criminal investigation where forensic science offers the ultimate 'key to the crime'. Nevertheless, it becomes apparent that the use of modern forensic technologies is infused into traditional tools, procedures and ways of thinking and seeing, upon which criminal investigation continues to operate. In this scenario, evidence that is produced in a laboratory by scientists is perceived to bear a status of certainty, which can also contribute to reinforce the police's 'moral authority'.⁴⁵ This was also emphasised during the *Madeleine McCann* case, where the Judiciary Police was subjected to criticism, mainly in the foreign press.

Hence, this type of discourse can be associated with the infotainment features that characterise modern media. In the Portuguese semi-peripheral context, this creates a sort of mistranslation through an imaginary by which it is 'science' and not the police that solves the problem of crime. This is a feature which ultimately illustrates a cultural effectiveness of the 'imagination of the centre' and a consequence of the scientification of police work, insofar as the police's legitimacy is reinforced for using similar techniques and scientific methods as the police forces in 'central' countries which are seen as more advanced and sophisticated, as part of the narrative of the imagination of the centre that also appears in the discourse of the quality press in the following section.

Distancing and scepticism

Besides the allusions to *CSI* to describe the sophistication and effectiveness of forensic science that marked the narratives of the tabloid *Correio da Manhã*, the other analysed newspapers mention the *CSI* series in order to evoke the contrasts and the distance from reality to forensic science fiction. For example, mentions in the *Diário de Notícias*⁴⁶ are from an opinion column of a retired criminal investigator and from a statement by the president of the criminal investigation workers' union. Both compare reality to the fictional portrayals, stating the differences between the time that analyses take to produce results, and remarking that it is not normal that the same person who collects traces at crime scenes will analyse them in the laboratory. The *Jornal de Notícias* also published an opinion column by the president of the National Institute of Legal Medicine, who likewise asserts the distance between fiction and reality: 'However, regrettably, this type of exam has its limitations. They do not always provide the spectacular, clear, and unequivocal results that are seen in currently very successful television series, like *CSI*.'⁴⁷

A reference to the *CSI* series appears in the quality newspaper *Público* as a metaphor for an ideal model of criminal investigation, albeit in an editorial written after the case was closed, directing criticism at the way the Judiciary Police conducted the investigation, but also to the sensationalist and speculative coverage by the media: 'It is not even necessary to expect that the PJ performs with the effectiveness of "CSI like" investigators to realise the number of mistakes made in the first hours and days.'⁴⁸

The appeal to the fictional metaphor with recurrent mentions of the *CSI* series works in two different directions. On the one hand, the tabloid press resorts to the series' high-tech imagery and the power of science for criminal investigation purposes as a way to bolster public confidence in the Judiciary Police, and also to translate the complexity of criminal investigation into more familiar images. On the other hand, the quality press uses the metaphor of *CSI* as a contrast between the ideal and the actual technologies and resources in a semi-peripheral context like the Portuguese case, thus projecting the hyper-real scenario of *CSI* as an aspirational motif.⁴⁹ This discourse of the quality press about *CSI* could then be a symptom of what Boaventura de Sousa Santos described as

the *imagination of the centre*,⁵⁰ or a Portuguese way of being semi-peripheral, insofar as the distance to the 'centre' is acknowledged, while simultaneously sensing a collective awareness that the gap may be bridged.⁵¹

Conclusion

The present analysis focused on understanding of how popular fictional metaphors, like the *CSI* series, can be enacted by journalists to convey information and project expectations about forensic science, DNA technologies and criminal justice in Portugal. The main concern underlying the *CSI* effect (or the *strong prosecutor effect*) was that people were being acquitted when they should be convicted because lay citizens in juries expected more scientific evidence. In an inquisitorial judicial system where jury trials are infrequent, and public controversies surrounding forensic evidence are almost non-existent, the media can often contribute to shape public adversarial narratives. When covering a shocking crime, this tendency can reproduce what Tyler⁵² has called the *reverse CSI effect*, and Cole and Dioso-Villa called the *defendant's effect*. In other words, a psychological need to punish alleged offenders may lead lay jurors or, in this case, journalists, to place undue weight or significance on expert evidence. This sort of effect can be enhanced by pre-trial media coverage, or even by what is referred to as a trial by media.⁵³ Trials by media can be harmful to suspects' presumption of innocence and social reputation. In this context, exaggerated inferences from the existence of forensic evidence in a given case can be particularly damaging.

Although praise for the novelty of forensic genetics could be seen in the quality press in earlier cases (*Meia Culpa*, 1997 and *Tó Jó*, 1999), the use of fictional metaphors to support a narrative where forensic science would produce the definitive evidence to solve criminal cases was particularly featured in the tabloid *Correio da Manhã*. Taking Cole and Dioso-Villa's *CSI* effect typology as a reference, I would suggest that the inclusion of recurrent references to *CSI* in the tabloid press configures a *journalist effect*. This would be an effect on the modulation of journalistic discourse and style, by which the cultural and socio-legal references shared with

the audiences are grounded on a fictional imaginary or dramatic genre as an explanatory metaphor. However, this may be a two-fold effect. While the popular press uses references to *CSI* mainly to praise and legitimise police work, quality newspapers tend to mobilise the fictional metaphor of *CSI* as a critique and a contrast with projections of idealised ways of using forensic science for criminal investigation purposes.

Notes

- 1 Helena Machado and Susana Silva, 'Portuguese Forensic DNA Database: Political Enthusiasm, Public Trust and Probable Issues in Future Practice', in Richard Hindmarsh and Barbara Prainsack (eds), *Genetic Suspects: Global Governance of DNA Profiling and Databasing* (Cambridge: Cambridge University Press, 2010), pp. 218–239.
- 2 Maria João Boavida, 'Portugal Plans a Forensic Genetic Database of its Entire Population', *NewropMag* 10 April 2005, <https://web.archive.org/web/20140712164838/http://www.newropeans-magazine.org/content/view/2063/121/lang,english/>.
- 3 Filipe Santos, Helena Machado and Susana Silva, 'Forensic DNA Databases in European Countries: Is Size Linked to Performance?', *Life Sciences, Society and Policy* 9:12 (2013), pp. 1–13. doi: 10.1186/2195-7819-9-12.
- 4 Martin Innes, 'Crime as a Signal, Crime as a Memory', *Journal for Crime, Conflict and the Media* 1:2 (2004), pp. 15–22.
- 5 Brewer and Ley have suggested that the media are a privileged source of information about DNA technologies for lay publics. Paul R. Brewer and Barbara L. Ley, 'Media Use and Public Perceptions of DNA Evidence', *Science Communication* 32:1 (2010), pp. 93–117. doi: 10.1177/1075547009340343.
- 6 Michael Lynch *et al.*, *Truth Machine: The Contentious History of DNA Fingerprinting* (Chicago: University of Chicago Press, 2008).
- 7 Boaventura de Sousa Santos, 'State, Wage Relations and Social Welfare in the Semiperiphery: The Case of Portugal', *Oficina do Centro de Estudos Sociais (CES)* 23 (1991), pp. 1–49. The expression 'imagination-of-the-center' was coined by Santos to describe the Portuguese political and economic transitions that combined the wake of the 1974 revolution, post-colonialism and its relations with former African colonies, with the membership of the EEC in 1986, placing Portugal as an intermediary between the core and the periphery.

- 8 Gray Cavender and Sarah K. Deutsch, 'CSI and Moral Authority: The Police and Science', *Crime, Media, Culture* 3:1 (2007), pp. 67–81. doi: 10.1177/1741659007074449. Another good example of the pervasiveness of surveillance technologies in crime fighting would be the 2011 CBS series *Person of Interest*.
- 9 Richard Hindmarsh and Barbara Prainsack (eds), *Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing* (Cambridge: Cambridge University Press, 2010).
- 10 Richard V. Ericson and Clifford Shearing, 'The Scientification of Police Work', in Gernot Böhme and Nico Stehr (eds), *The Knowledge Society: The Growing Impact of Scientific Knowledge on Social Relations* (Dordrecht: D. Riedel, 1986), pp. 129–159.
- 11 Murphy calls DNA typing the *archetypical second generation science*, Erin Murphy, 'The New Forensics: Criminal Justice, False Certainty, and the Second Generation of Scientific Evidence', *California Law Review* 95:3 (2007), pp. 721–797. See also Michael J. Saks and Jonathan J. Koehler, 'The Coming Paradigm Shift in Forensic Identification Science', *Science* 309:5736 (2005), pp. 892–895.
- 12 Sheila Jasanoff, 'DNA's Identity Crisis', in David Lazer (ed.), *DNA and the Criminal Justice System: The Technology of Justice* (Cambridge, MA: MIT Press, 2004), pp. 337–355.
- 13 Helena Machado and Barbara Prainsack, *Tracing Technologies: Prisoners' Views in the Era of CSI* (Farnham, UK: Ashgate, 2012).
- 14 'Arguments highlighting the benefits of forensic DNA technologies assume a hegemonic position in public discourses, where crime is typically assumed to be the problem and tools to fight crime are proposed to be the answer. Surveillance is seen as a necessary evil that needs to be accepted for a greater good' (p. 1129). Barbara Prainsack and Victor Toom, 'The Prüm Regime: Situated Dis/empowerment in Transnational DNA Profile Exchange', *British Journal of Criminology* 50:6 (2010), pp. 1117–1135.
- 15 See, for example, Richard Willing, "'CSI effect" has Juries Wanting More Evidence', *USA Today*, 8 May 2004.
- 16 Valerie P. Hans and Juliet L. Dee, 'Media Coverage of Law: Its Impact on Juries and the Public', *American Behavioral Scientist* 35:2 (1991), pp. 136–149. doi: 10.1177/0002764291035002005.
- 17 Simon Cole and Rachel Dioso-Villa, 'Law and the Lab: Do TV Shows Really Affect how Juries Vote? Let's Look at the Evidence', *The Wall Street Journal* (New York, 2005), www.wsj.com/articles/SB111594466027532447; Simon Cole and Rachel Dioso-Villa, 'CSI and its Effects: Media, Juries, and the Burden of Proof', *New England Law Review* 41:3 (2007),

- pp. 435–470; Simon Cole and Rachel Dioso-Villa, ‘Investigating the “CSI Effect” Effect: Media and Litigation Crisis in Criminal Law’, *Stanford Law Review* 61:6 (2009), pp. 1335–1374; Simon Cole and Rachel Dioso-Villa, ‘Should Judges Worry about the “CSI Effect”?’’, *Court Review* 47 (2011), pp. 16–27.
- 18 Eric Beauregard and Martin Bouchard, ‘Cleaning up Your Act: Forensic Awareness as a Detection Avoidance Strategy’, *Journal of Criminal Justice* 38:6 (2010), pp. 1160–1166. doi: 10.1016/j.jcrimjus.2010.09.004.
 - 19 See Cole and Dioso-Villa, ‘CSI and its Effects: Media, Juries, and the Burden of Proof’.
 - 20 Young S. Kim, Gregg Barak and Donald E. Shelton, ‘Examining the “CSI-Effect” in the Cases of Circumstantial Evidence and Eyewitness Testimony: Multivariate and Path Analyses’, *Journal of Criminal Justice* 37:5 (2009), pp. 452–460. doi: 10.1016/j.jcrimjus.2009.07.005; Shelton, Kim and Barak, ‘A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the “CSI Effect” Exist?’; Ian Hawkins and Kyle Scherr, ‘Engaging the CSI Effect: The Influences of Experience-Taking, Type of Evidence, and Viewing Frequency on Juror Decision-Making’, *Journal of Criminal Justice* 49: March–April (2017), pp. 45–52. doi: 10.1016/j.jcrimjus.2017.02.003; Nicholas J. Schweitzer and Michael J. Saks, ‘The CSI Effect: Popular Fiction about Forensic Science Affects the Public’s Expectations about Real Forensic Science’, *Jurimetrics Journal* 47 (Spring 2007), pp. 357–364.
 - 21 Law 45/2004, that regulates medical-legal and forensic procedures, confers the monopoly of forensic activities to two public entities: the Laboratory of Scientific Police and the National Institute of Legal Medicine and Forensic Sciences. Lei 45/2004, *Regime Jurídico Das Perícias Médico-Legais e Forenses* (Portugal: Diário da República, 1.a série A — N.º 195., 2004).
 - 22 Law n.º 49/2008 which approves the law for the organisation of criminal investigation. Available at: <https://dre.pt/dre/legislacao-consolidada/lei/2008-67191210-67192945>.
 - 23 Susana Costa, ‘Visibilities, Invisibilities and Twilight Zones at the Crime Scene in Portugal’, *New Genetics and Society* 36:4 (2017), pp. 375–399. doi: 10.1080/14636778.2017.1394835.
 - 24 Susana Costa, ‘DNA as “Ready-Made Evidence”: An Analysis of Portuguese Judges’ Views’, *International Journal of Evidence and Proof* 26:2 (2022), pp. 121–135. doi: 10.1177/13657127211070331.
 - 25 Filipe Santos, ‘Making Sense of the Story: The Dialogues between the Police and Forensic Laboratories in the Construction of DNA Evidence’, *New Genetics and Society* 33:2 (2014), pp. 181–203.

- doi: 10.1080/14636778.2014.916186; Susana Costa and Filipe Santos, 'The Social Life of Forensic Evidence and the Epistemic Sub-Cultures in an Inquisitorial Justice System: Analysis of Saltão Case', *Science and Justice* 59:5 (2019), pp. 471–479. doi: 10.1016/j.scijus.2019.06.003.
- 26 David L. Altheide, 'Moral Panic: From Sociological Concept to Public Discourse', *Crime, Media, Culture* 5:1 (2009), pp. 79–99. doi: 10.1177/1741659008102063.
 - 27 Simon Cottle, 'Mediatized Public Crisis and Civil Society Renewal: The Racist Murder of Stephen Lawrence', *Crime, Media, Culture* 1:1 (2005), pp. 49–71. doi: 10.1177/1741659005050243.
 - 28 Filipe Santos, *Do Meia Culpa a Madeleine McCann. Casos Mediáticos e Genética Forense Em Portugal* (Coimbra: Almedina, 2021).
 - 29 Richard V. Ericson, Patricia Baranek, and Janet Chan, *Representing Order: Crime, Law, and Justice in the News Media* (Buckingham, Milton Keynes: Open University Press, 1991).
 - 30 Colin Sparks, 'Introduction: The Panic over Tabloid News', in Colin Sparks, John Tulloch and Barbie Zelizer (eds), *Tabloid Tales: Global Debates over Media Standards* (New York: Rowman & Littlefield, 2000), pp. 1–40.
 - 31 Richard V. Ericson, Patricia Baranek and Janet Chan, *Representing Order: Crime, Law, and Justice in the News Media* (Buckingham, Milton Keynes: Open University Press, 1991).
 - 32 Pierre Bourdieu, 'L'emprise du journalisme', *Actes de La Recherche En Sciences Sociales* 101:1 (1994), pp. 3–9.
 - 33 These distinctions were the subject of analysis in Helena Machado and Filipe Santos, 'Popular Press and Forensic Genetics in Portugal: Expectations and Disappointments Regarding Two Cases of Missing Children', *Public Understanding of Science* 20:3 (2011), pp. 303–318. doi: 10.1177/0963662509336710. While much has changed since then in terms of media outlets, the article contains information about the readership of the tabloid *Correio da Manhã*, which characterises it as being mainly constituted by comparatively lower socio-economic reading groups of the Portuguese population.
 - 34 António de Oliveira Salazar, born in Santa Comba Dão, was the head of the fascist dictatorship that ruled Portugal from 1932 until he was substituted for health reasons in 1968, leading to the 1974 Carnation Revolution.
 - 35 The authors argue that the: 'increased expectations of and demands for scientific evidence is more likely the result of much broader cultural influences related to modern technological advances, what we have chosen to call a "tech effect"' (p. 362). Shelton, Kim and Barak,

- 'A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the "CSI Effect" Exist?'
- 36 José B. Amaro and Alexandra Campos, 'Detido incriminado pelos testes genéticos', *Público* July 2000.
- 37 This was an interesting development, particularly for the practices of forensic reporting, as the first DNA analyses stated that mixed samples found in the getaway car and in a bathroom were 'compatible' with Nuno (and others). The re-exam requested by Nuno's defence attorney, made in the same institution, but in another laboratory, stated that it was not possible to 'safely declare' that the mixed samples matched with Nuno. This illustrates an attempt to fit the evidence into the narrative that there was more than one offender. Subsequent forensic reports in other cases would be more accurately worded to prevent misinterpretation.
- 38 The *Público*'s news article briefly describes the discovery of identification through DNA profiles: 'As impressões digitais genéticas', *Público* (Porto, 27 April 1997).
- 39 António Lage, Leonete Botelho and Alfredo Leite, 'Os fios da meada', *Público*, April 1997.
- 40 Moira Peelo, 'Framing Homicide Narratives in Newspapers: Mediated Witness and the Construction of Virtual Victimhood', *Crime, Media, Culture* 2:2 (2006), pp. 159–175. doi: 10.1177/1741659006065404.
- 41 Richard V. Ericson, 'How Journalists Visualize Fact', *The ANNALS of the American Academy of Political and Social Science* 560:1 (1998), pp. 83–95. doi: 10.1177/0002716298560001007.
- 42 Monica Robbers, 'Blinded by Science: The Social Construction of Reality in Forensic Television Shows and its Effect on Criminal Jury Trials', *Criminal Justice Policy Review* 19:1 (2008), pp. 84–102.
- 43 Carlos Ferreira, 'Como a PJ apanhou o cabo', *Correio Da Manhã*, 27 January 2007.
- 44 Eduardo Dâmaso and Tânia Laranjo, 'Exames marcam morte de Maddie', *Correio Da Manhã*, 7 January 2008, www.cmjournal.xl.pt/exclusivos/detalhe/exames-marcam-morte-de-maddie.html.
- 45 Cavender and Deutsch, 'CSI and Moral Authority'.
- 46 The *Diário de Notícias* was first published in 1864 and is regarded as a quality newspaper. It belongs to the same media group as the *Jornal de Notícias*.
- 47 Duarte N. Vieira, 'Perícias não se compadecem com pressas', *Jornal de Notícias* (Porto, 2007), www.jn.pt/nacional/dossiers/o-caso-maddie-mccann/ponto-de-vista/pericias-nao-se-compadecem-com-pressas-664934.html.
- 48 José M. Fernandes, 'O fim do caso Maddie e o princípio de outros pecados', *Público*, 22 July 2008.

- 49 Umberto Eco, *Travels in Hyper Reality* (San Diego: First Harvest, 1990).
- 50 Santos, 'State, Wage Relations and Social Welfare'.
- 51 João Arriscado Nunes, 'As dinâmicas da(s) ciência(s) no perímetro do centro: Uma cultura científica de fronteira?', *Revista Crítica de Ciências Sociais*, 63:October (2002), pp. 189–198.
- 52 Tom R. Tyler, 'Viewing CSI and the Threshold of Guilt: Managing Truth and Justice in Reality and Fiction', *The Yale Law Journal* 115:5 (2006), pp. 1050–1085. doi: 10.2307/20455645.
- 53 Chris Greer and Eugene McLaughlin, '“Trial by Media”: Policing, the 24–7 News Mediasphere and the “Politics of Outrage”', *Theoretical Criminology* 15:1 (2011), pp. 23–46. doi: 10.1177/1362480610387461.