

TECHNICAL NOTE

General

Sources of bias in death determination: A research note articulating the need to include systemic sources of biases along with cognitive ones as impacting mortality data

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Abstract

There are structural and organizational factors that impact how and what mortality data are collected. There are individual decision-making processes and implicit cognitive biases that influence how and what mortality data are collected. Yet there seems to be a disconnect between how and why these two broad sources of bias may collide and how both need to be understood in order to be able to approach solutions aimed at strengthening the accuracy of mortality data. Using results from a mixed-method, long-term research project at four medicolegal offices in two countries, France and the United States, this research note proposes that truly understanding the sources of implicit cognitive bias in forensic pathologists and other medicolegal actors requires knowledge of legal, cultural, and organizational structures that shape medicolegal systems and in turn constrain individual actors' decision-making processes. The goal is to advocate for multilevel and multi-methods approaches to propose systemic solutions to the issue of implicit cognitive biases in forensic pathologists and other medicolegal actors' decision-making processes. For this purpose, the author outlines a series of specific issues to be integrated in future research.

KEYWORDS

death determination, death investigation, implicit bias, manner of death, systemic bias

Highlights

- Mortality data quality starts with the medicolegal determination of the manner of death.
- Death investigation is influenced by legal, institutional, organizational, and individual factors.
- Medicolegal investigation processes and structures vary from jurisdiction to jurisdiction.
- Medicolegal decision-making is influenced by training and implicit bias at the individual level.
- The varying sources of mortality data error and bias need to be considered from an integrative standpoint.

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1 | INTRODUCTION

When forensic pathologists classify deaths as natural, accidents, suicides, or homicides, they engage in decision-making processes, which have been shown to be influenced by a number of implicit cognitive biases [1, 2]. While more and more research has been focused on identifying the existence of such biases, less seems to be taking into consideration the source of these biases. Indeed, much of the focus, which at first was on identifying the existence of discrepancies in the manner of death determination (see Refs. [3-10] for an illustrative sample of this literature), has now shifted to providing evidence that the source of discrepancies is related to implicit cognitive bias [1, 2, 11].

Recognizing the impact of implicit cognitive biases on forensic pathologists' decision-making processes is crucial in identifying shortcomings in mortality data quality. However, fixing these shortcomings requires understanding where these implicit cognitive biases come from, and how to address them. Implicit bias is an individual-level cognitive process, yet it reflects the ways in which larger structural and systemic issues shape individual decision-making. Indeed, these cognitive biases mirror the ways in which societies are structured and social systems are set, perpetuating hierarchies, stereotypes, and value systems. As these biases are learnt heuristics reinforced over time, we can change them through learning and/or training [12, 13], yet because they reflect problematic systemic structures, changing those structures is another, potentially longer-lasting way to alter them.

Using results from a mixed-method, long-term research project at four medicolegal offices in two countries, France and the United States, this research note proposes that truly understanding the sources of implicit cognitive bias in forensic pathologists and other medicolegal actors requires knowledge of legal, cultural, and organizational structures that shape medicolegal systems and in turn constrain individual actors' decision-making processes. This article provides a synthesis of results from a long-term project, some of which have been published in various forms over the years (see Refs. [14-17]).

Following a brief description of the research methodology, this research note presents an integrative view of the series of factors that combine to constrain and influence medicolegal actors' decision-making processes, from legal definitions to institutional structures to individual biases. The goal is to advocate for multilevel and multi-methods approaches to propose systemic solutions to the issue of implicit cognitive biases in forensic pathologists and other medicolegal actors' decision-making processes.

2 | METHODOLOGICAL OVERVIEW

Over the course of 15 years, the author conducted ethnographic observations at four medicolegal offices in two countries. In the United States and in France, the author roughly spent a combined 13 months observing a large regional medical examiner's office, a medium-size

county coroner's office, and two "Instituts Médico-Légaux." In addition to observing about 130 autopsies, going to death scenes, and talking to more than thirty medicolegal professionals at these four sites, the author also extracted data from close to 800 autopsy reports. The research also involves extensive analysis of legal statutes, some historical research, and surveys.

This research note builds upon this first-hand ethnographic knowledge, a series of quantitative and content analyses, and the extant literature, to outline the ways in which research ought to proceed forward in the study of implicit cognitive biases in decision-making by medicolegal actors. By providing a long-range view of the factors influencing these biases, the author highlights, italicized at the end of each level of the analysis, the key aspects that should guide future research.

The mixed methods and comparative aspects of this research are key to outlining the ways in which factors influencing decision-making processes layer onto one another in a multilevel model (which is yet to be fully fleshed out). The remainder of this research note will follow as many threads of influence as possible, from the broadest, most structural, to the individual level.

3 | DEFINITIONS OF DEATH

Death is not solely a physiological and biological event; it is also a social and administrative one. Yet, even as a physiological and biological event, death is not so clearly dichotomous (alive vs. dead). It is not within the purview of this research note to discuss the complexities and debates associated with what defines death as the absence of life, but rather they are brought up to underscore how much subtlety exists even at what may appear to be the most basic of facts. Indeed, death is not an on/off system, but rather an intricately linked sequence of events, a process. Because of this, where we draw the line on where life ends and death begins is a social decision [18]. Further, death is also a social and administrative life event, and is regulated as such. Those regulations have an impact on the accuracy of mortality data, which is covered below.

How death is pronounced varies quite a bit between countries, but also within the United States. It is worth noting that in the United States, no fewer than 10 types of professionals can pronounce someone dead as outlined in state statutes [16]. These actors represent a wide range of health professionals, including various types of doctors, nurses, and emergency respondents. It is worth noting, however, that 31 states do not specify personnel type in their statutes and instead simply mention that the determination of death must be made "in accordance with accepted medical standards." In France, physicians are the only professionals allowed by law to pronounce death. This is facilitated in practice by the fact that French emergency response teams always include a physician. Of course, the fact that who can pronounce death varies by location does not have a direct effect on mortality data. It is nonetheless indicative of the variability of approaches surrounding death, including the possibility that professionals authorized

to pronounce death might have varying degrees of training and familiarity with how to behave and interact with the bodies of deceased persons.

Once a death is pronounced, it needs to be classified and then certified. The classification of death entails figuring out the reason it happened, which includes determining the physiological cause, as well as establishing the existence and directionality of a potential lethal intent, which is what the concept of manner of death aims at measuring. Deaths can be natural, in which nobody intended for the death to happen, and the cause was internal. They can be accidental, in which there is also no intent, but the cause is external. They can be suicides, in which the cause is external but the intent internal. They can be homicides, in which the cause and the intent are external. Finally, deaths can be of undetermined or unknown manner. When it comes to the cause of death, determining it involves using the nosography developed by the World Health Organization in the International Classification of Diseases and Causes of Death (ICD). The ICD, now in its 11th revision, provides an exhaustive list of diseases and causes of death, embedding not only physiological causes but also manner within codes. For example, homicides are classified under chapter 23, "External causes of morbidity or mortality," subsection on "Assault." That subsection is further broken down by instrument. Some homicides can also be classified under the subsection on "Maltreatment" [19].

A number of professionals can classify death in the United States, the most common being physicians. In addition, in some states and in some capacities, these professionals can include registered nurses, child fatality review teams, or funeral directors [16]. Despite the dominance of physicians in the role of death classifiers, it is important to note that not all physicians are equally equipped to properly identify the cause of death and make use of the ICD [20, 21]. In France, only physicians are allowed to classify the cause of death. Manner of death, however, is not included on the French death certificate.

Once cause and manner of death are identified, deaths need to be certified. The certification of death involves the signing of the death certificate, the final administrative document to someone's life. Signing the death certificate ascertains the veracity of its content, which, among other things, includes the cause and, in the United States, the manner of the death. Again, the range of professionals authorized by law to certify death is fairly varied in the United States. [16]. Again, it can only be physicians in France. It is once more important to note that not all physicians are equally trained at filling out death certificates.

The certification of the death is an important step as it allows for a number of administrative processes to take place, such as proceeding with funeral arrangements (in France, a completed death certificate is required for a burial permit to be issued) or garnering life insurance, for example. It is also a step that can be part of the instigation of judicial proceedings, such as is the case when manner of death "Homicide" is checked on an American death certificate, or when the "medicolegal objection" is checked on the French death certificate.

Deconstructing the certification process makes evident the fact that death certificates exchange hands many times through it all, increasing the possibilities of errors and multiplying avenues for biases.

4 | INSTITUTIONALIZATION OF SUSPICIOUS DEATHS

While most deaths are certified in a straightforward fashion by a family practitioner who knew the deceased and understood her death as expected, some deaths violate our social norms and come unexpectedly or unexplainably. These are the deaths that bring us to the intersection of medicine and the law, with the involvement of those referred to here as medicolegal professionals.

4.1 | Involvement of medicolegal professionals

In the United States, the deaths falling within the purview of medicolegal professionals are generally identified in state statutes and represent those deaths that are unexpected, violent, suspicious, or unattended. As such, when a death occurs that might fall within a medicolegal jurisdiction, medicolegal professionals are called upon to make a determination as per the appropriateness of their involvement.

In France, the process is more fluid, in that it relies on the death certificate as a routing document for the involvement of medicolegal professionals. Indeed, while there is no manner of death listed on the French death certificate, there is a checkbox titled "medicolegal objection." If ticked, this checkbox will engage a judicial process by involving the prosecutor's office, which then becomes the only entity legally allowed to lift the objection and deliver the death certificate. In order to do so, the prosecutor's office can avail itself of the services of experts to clarify the cause and manner of death through the use of a formal subpoena. This is when medicolegal professionals get involved in death investigation in France, as experts to the court. This process helps explain why the rate of medicolegal autopsies in France is estimated to be somewhere between 1.5% and 4% of all deaths [22, 23], when that estimate is potentially as high as 20% in the United States [24, 25]. This much lower rate of autopsies is bound to have an impact on the accuracy of mortality data.

Who ticks the medicolegal objection checkbox therefore becomes of paramount importance. In most homicide cases, though, medicolegal professionals might be subpoenaed to the crime scene for what is called a "levée de corps" (literally meaning the rising of the body, but translating to the examination of a body at the scene of the death), and from there, they tick the medicolegal objection checkbox themselves on the death certificate.

Prosecutors' and their offices' interpretation and implementation of legal and regulatory texts, whether French or European, also matter with regard to scene examinations and autopsy subpoenas. There is no uniformity in those procedures [22] despite a major overhaul of the medicolegal system in France in 2011. The relationship

between the local prosecutor's office and the local medicolegal institute also matters. At one of the French sites studied by this author, a prosecutor's office had seized upon the opportunity created by the massive 2011 reform of the medicolegal system to stop systematically requesting the medicolegal institute to send one of their physicians to scenes for examinations, thereby limiting the ability of the medicolegal professionals to play a role in determining whether or not a death might warrant a medicolegal objection.

In cases in which a medicolegal professional is not the one initiating the death certification process, but rather it is done by a physician lacking in such training, it is possible that signs of foul play (or evidence of other reasons for a medicolegal objection, such as suicidality) may be missed. And if the medicolegal objection box is not checked on the death certificate, the likelihood that medicolegal professionals will get involved diminishes.

Here, we see how the ways in which statutes identifying varying ranges of discretion in assigning jurisdiction may profoundly impact individual decision-making.

4.2 | Variations in medicolegal systems

Of course, the structure of the medicolegal system itself has an impact on how medicolegal investigations are conducted. In France, the system is shaped on the premise that medicolegal professionals will only get involved in the death investigation process when summoned by judicial actors. As such, medicolegal practices are not centered solely on death investigations in the way American medicolegal offices are. Indeed, in France, the bulk of medicolegal professionals' workload is centered on the living, not the dead. This is even reflected in institutional structures, with medicolegal institutes (Instituts Médico-Légaux) focusing on the dead, and medico-judicial units (Unités Médico-Judiciaires) focusing on the living. The latter's focus is to ascertain the extent of physical or psychological damages from criminal or work-related injuries for insurance, labor, and judicial purposes, whether criminal or civil. This has a number of different effects on institutional practices of death investigation, from medicolegal professionals' training, to their schedules, as well as their budgets. But before going into each of those specific areas, the broad institutional structure of legal medicine in France will first be presented.

The continental approach to legal medicine can be traced to the influence of the Catholic church in the 14th century, and to Charles V's *Constitutio Criminalis Carolina* in 1532 Holy Roman Empire [26]. This approach, in contrast with the English approach, proposes from those early times that medical experts should be consulted on issues surrounding death. The French model is the embodiment of this approach, but its formalization has only fairly recently led to a unified system. Indeed, until 2011, the French medicolegal system was a patchwork of ad hoc units shaped by and existing only because of either historical precedent or the commitment of individuals. Autopsies were remunerated by the prosecutor's office per act to the professional conducting the autopsy, and medicolegal institutes

were housed on ad hoc bases in teaching hospitals. It is important to understand that because of the historical development of legal medicine in France, it was not a specialty and medicolegal professionals therefore had to find a disciplinary home within either their own medical specialty, or in "non-organ specific" services such as emergency departments [27]. Understanding the training of medicolegal professionals in France is central to understanding the institutional structure of medicolegal practices, as the integration of medical fields in university hospitals in France in 1960 was crucial to the organization of medicine. The awkward position of legal medicine outside of the naturally understood bounds of medicine as providing for the healing of populations led to these rocky beginnings.

Following a lengthy process of reports [28] and blue ribbon commissions, the French medicolegal system was reorganized in 2011, following a 2010 inter-ministerial circular. The reform pertained both to the geographic organization of medicolegal jurisdictions and to the financing of medicolegal operations. Still housed in teaching hospitals, medicolegal institutes and medico-judicial units are now funded by the justice ministry through the hospital, based on baseline evaluations of workloads and needs assessments of personnel [27]. Medicolegal jurisdictions are now organized in regional, departmental (or county), and local districts. Aside from the Paris medicolegal institute and the criminal research institute of the Gendarmerie, which both fall under the Interior Ministry, there are thirty regional centers, the only places where autopsies are conducted. When prosecutors' offices or investigating judges subpoena medicolegal professionals, they now subpoena the institution in the person of the hospital director, who then appoints the appropriate service head, who then delegates to appropriate personnel under their supervision.

With regard to training, French medicolegal experts are all physicians, but they are typically not specialized in forensic pathology. They do hold a complementary training degree in legal and forensic medicine, which can be obtained either during their medical studies or once board-certified as physicians. That complementary degree does not stand by itself, and therefore, medicolegal professional in France come from a variety of medical specialties, but often psychiatry.

With regard to the overall functioning of medicolegal institutes, because they find themselves in somewhat of a reactive position when it comes to death investigation, and because the French workday is significantly different from the American workday, autopsies are scheduled. While there are medicolegal physicians on duty 24/7 in each institute to respond to death scenes or detention calls (medicolegal professionals in France are also tasked with providing medical support for individuals provisionally detained by police), autopsies are fit into the schedule depending on staffing variations and caseload. Autopsies are not typically conducted after hours or on the weekends, or, for that matter, during lunch time, a sacrosanct break during the French workday.

In some ways, the American medicolegal system is much simpler than the French one; in others, it is much more complicated. It is simpler in that the involvement of medicolegal professionals

is mostly clearly outlined by statutes, removing most discretion as per their jurisdictional authority and limiting it to death. The organizational structure of medicolegal offices in the United States is thus streamlined in that regard: Death investigation is the only focus. It is more complicated in that there is not one medicolegal model in the United States, but two main ones (with a number of off-shoots): the coroner and the medical examiner systems. Each system is based on a different political assumption and framework. On the one hand, the coroner system is an inheritance of the old English Crowners, agents of the crown in charge of collecting taxes and representing the interests of the Crown [29]. In its American adaptation, though, its political motivation has shifted toward democratic representation. On the other hand, the medical examiner system is more directly related to the continental models centered on the importance of expert opinions, and the specialization of bureaucratic tasks. Here, some of the common aspects of each of the main American systems will provide an illustration.

The American coroner system, despite sharing a name with its ancestral British counterpart, is quite different from it. The majority of American coroners are partisan elected officers of the county. Setting aside the case of Louisiana, to be qualified to run for county coroner, candidates typically only have to be 18 years of age, and a resident of the county in which they are running [16]. While they do not cover the majority of the population, coroners do cover the majority of counties in the United States [16, 30, 31]. Coroners tend to be most represented in rural counties, while medical examiners are mostly in urban areas. It is important to understand that coroners are typically not the ones who conduct autopsies, and while resources vary greatly from one coroner's office to the next, it is not unusual for larger coroners' offices to employ in-house board-certified forensic pathologists, or for smaller coroners' offices to contract either with a larger office or with an independent forensic pathologist for their autopsies. Nonetheless, in coroners' systems, the coroner is the signatory authority for death certificates in death cases falling under their jurisdiction.

As mentioned above, larger coroners' offices employ board-certified forensic pathologists to conduct autopsies. They also employ, like larger medical examiners' offices, death investigators to assist with death scenes and other investigative needs. Training for such positions is typically provided upon employment through a variety of professional and certification bodies, universities, and private providers [32], as well as through in-house field training [33], and is part of the certification process. It is important to note, though, that, because death investigation in the United States is a county matter, access to resources and professional standards are far from uniform across coroners' offices.

Beyond investigating the manner and cause of death, coroners, depending on jurisdictions, can also conduct inquests. Coroners' inquests in the United States place the coroners' responsibilities more in line with those of coroners in other parts of the former British empire. Such inquests are generally to take place in front of a lay jury, with the coroner presiding, and are fact finding endeavors, not trials.

The goal is most often to ascertain the circumstances surrounding the death, but it can also be to establish a deceased's identity. While these inquests are sometimes statutorily mandated in some jurisdictions, they are discretionary in others.

Since the progressive Era, the coroner system has been under attack, viewed as corrupt and criticized for its reliance on non-expert political actors. The medical community has been central in a push for more specialization and a greater involvement of medical actors in the investigation of deaths, more in alignment with the continental system of legal medicine. The resulting creation of medical examiners, a system of death investigation led by medical actors specialized in forensic pathology, the medical study of death, garnered an increased interest in the first part of the 20th century. The number of counties switching from coroners to medical examiners seemed at first on an exponential trajectory. That trend, however, has all but flattened since the 1950s, and coroners maintain jurisdiction over a majority of counties in the United States, and almost half of the population [16, 30, 31].

As mentioned above, the medical examiner system is predicated on the continental European model of legal medicine, relying on experts for the investigation of death. In the United States, this means medical examiners are board-certified forensic pathologists, not only in the autopsy room but also at the managerial level. While there is quite a bit of variation, is it not uncommon for medical examiners' offices to operate in a more centralized fashion than coroners' offices at the state level. Some states have a chief medical examiner, overseeing the operations of a state medical examiner's office, or sometimes some regional offices. Unlike states in which coroners are more prevalent, medical examiners tend to exist in more urban environments and thus generally operate larger structures [16, 30, 31].

The push to shift away from the coroner system to the medical examiner system has been predicated on the idea that coroners, as laypeople, cannot determine the cause and manner of death as accurately as medical experts can. This assumption, however, rests on the notion that lay coroners do not resort to expert opinion, which, as mentioned earlier, is a mostly erroneous assumption. The fact that coroners also call on board-certified forensic pathologists has been posited to explain the flattening of the trend of coroner systems being replaced by medical examiner systems.

My ethnographic work at a large-size regional medical examiner's office and a medium-size coroner's office in the United States was marked by one overarching observation: The overall functioning of the two offices was not all that different. At both sites, the day would start with a staff meeting during which the day's upcoming cases were presented and assigned, autopsies would then take place in the morning, conducted by board-certified forensic pathologists, who would then spend their afternoons reviewing results and formalizing their reports, while investigators would tend to pending investigations, address new cases, and go to scenes. Volumes would vary, and so would staff size (and budget), but the contrast between the two sites was much lesser than the contrast between the American and French sites.

An important issue plaguing both coroners and medical examiner systems, however, is the dearth of board-certified forensic pathologists [34, 35], which means sometimes incredibly high caseloads, and thus an increased potential for errors at the individual level. Additionally, because of this dearth, forensic pathologists find themselves less able to engage in the research necessary to establish the field as an academic and scientific one [34], which might also lead to less consideration of systemic biases and their influences on individual decision-making processes. Finally, the cause of such dearth, while certainly complex, is not unrelated to the significantly lower wages earned by forensic pathologists compared to pathologists working in other sectors.

Here, the complex set of institutional and organizational structures leads us to question how individual decision-making processes are constrained by the contexts in which they take place, from education and training, to funding, certification, staffing, and access to resources.

5 | INDIVIDUAL DECISION-MAKING

The body of research outlining the various ways in which individual-level factors influence medicolegal professionals' individual decision-making processes is quite extensive, including case characteristics and individual professionals' characteristics.

5.1 | Impact of deceased characteristics and death circumstances

There is considerable evidence that the characteristics of a deceased person and those of her death can influence the classification of the manner of her death. For example, active modes of death such as hanging, shooting, falling, or stabbing predict suicide classification and passive modes such as choking, poisoning, drowning, and electrocution predict accident classification [3]. In fact, the classification of drug overdoses as accidents in the absence of a suicide note or other such evidence was considered best practice at all four of my research sites. The ongoing opioid epidemic crisis in the United States has opened a debate on the issue of late by reinvigorating the notion of self-injury death [4].

Beyond death mode or circumstance, the demographics of deceased persons are also known to impact the cause and manner of death classification. The most studied demographic factors with regard to cause, manner, or death reporting impacts are gender, race and ethnicity, and age.

For illustrative purposes, and without intending to be exhaustive, suicides of African Americans and Hispanics have a higher likelihood of being underreported in the United States [5, 6], while deaths of Indigenous people in Australia are more likely to be classified as suicides [7]. Maternal deaths are likely to be underreported because a woman's recent pregnancy is often not noted on the death certificate [8]. Maltreatment deaths of children are underreported in rural areas, as well as for white and male children, especially in cases involving passive maltreatment such as neglect [9]. Deaths of

women, African Americans, Asian Americans, and Native Americans are more likely to be classified as undetermined [10]. While some of these discrepancies might reflect behavioral differences, such as men's tendency to act upon suicidal thoughts using active modes of death such as firearms compared to women's preference for more passive methods such as drug overdoses, an expanding body of research looks to heuristics and systemic bias in order to explain them.

5.2 | Interindividual differences in medicolegal professionals' decision-making

Indeed, when we look at how a death or a deceased person's characteristics influence the classification of the manner of their deaths, it is really the death certifier's decision-making process we are looking at. Since at least 1997, and the pioneering works of Goodin and Hanzlick, some light has been shed on the overall idiosyncrasies of medicolegal professionals' decision-making processes in the determination of the manner of death.

In their original work, Goodin and Hanzlick [36] surveyed American medical examiners and coroners, asking them to assign manner of death in hypothetical yet controversial death scenarios. Results showed lack of agreement and highlighted the fact that classifying the manner of death may not be as clear-cut as some TV shows would have us believe. Further work has solidified these findings: not only a follow-up on the original survey by Hanzlick, Goodin, and Haden-Pinneri [37], but also work addressing different angles of this question, including some by this author [17], and other using experimental designs [11].

First, a statistical analysis of autopsy reports randomly selected from all four of the author's research sites [17] showed that men were more likely than women to classify deaths as homicides (or be assigned to homicides, this remains to be clarified) and that French medicolegal professionals were more likely than American ones to classify deaths as homicides. The latter finding makes sense within the larger institutional context presented earlier. Considering that medicolegal professionals in France only get involved in the investigation of deaths when subpoenaed by judicial actors, a smaller slice of all deaths falls within their jurisdiction, increasing the proportion of homicides among the deaths they do investigate, despite the fact that homicide rates in France are much lower than they are in the United States. The former finding points to deeper sources of discrepancies, possibly aligned with issues of systemic and implicit bias.

This implicit bias has been more experimentally studied using vignette surveys of forensic pathologists [11], and showcasing that small, inconsequential differences in case characteristics, such as the race of a deceased person, or who the reporting next of kin is, can have some significant impact on case outcome determination, even though the clinical and investigative facts of the case remain the same. This research builds upon a growing body of literature on the specificities of implicit bias impacts in forensic sciences in general, as well as broader discussions pertaining to the role of expertise in limiting (or increasing) such impact on decision-making processes [1].

Here, we see how cognitive biases clearly stem from systemic biases, and how experts may not hold the key to averting such biases' impact, thereby positioning solutions within a broader set of structural parameters, which require more integrative research.

6 | CONCLUSION

Mapping out the manner of death classification by medicolegal professionals engages questions pertaining to the very definition of death, which is a lot less straightforward than one might imagine. It also invites one to think about what agents might be tasked with determining whether death has indeed occurred. Once death has been pronounced, its certification involves yet another set of definitions and actors: What are deaths that will prompt the involvement of medicolegal professionals, and what will shape that process? Who are medicolegal actors? How are they trained? What are their jurisdictions? In what capacity do they participate in the criminal justice process? Further, we ought to question how the manner of death categories emerge and whether they truly are mutually exclusive. Medicolegal professionals operate in institutional structures, which themselves have an impact on practices. And finally, medicolegal professionals themselves bring a number of factors to bear on their own practice, whether it is their respective training, life experiences, or the systemic biases internalized from the society in which they live.

In this research note, the author identified evidence of variations and discrepancies at every one of the levels listed above. Whether it is the wide range of differently trained professionals to pronounce and certify death, or having, sometimes in the same state, two medicolegal systems as different as coroners and medical examiners cohabitate, the United States provide an example of how de-centralization can lead to sources of discrepancies in medicolegal practices, and thus in the compilation of mortality data. With its broader reach beyond death and into life, French medicolegal professionals find themselves in a peculiar situation, one in which forensic pathology is not the most useful medical specialization for the bulk of their activity. Additionally, as experts to the courts, they also find themselves in a reactive rather than proactive stance when it comes to the medicolegal investigation of suspicious deaths. While the American system and its patchwork of medicolegal approaches can mean that some deaths fall through the cracks due to lack of resources or training, the French system's tendency to under-involve medicolegal professionals early on in the investigative process can be the reason why deaths may fall through the cracks.

Of course, it is always difficult to study what might have been... the absence of... the possibility of something different. Medicolegal decision-making processes are not straightforward, black or white, and right or wrong decisions. They are made on a continuum of certainty and based on socially constructed categories. While most cases fall squarely and obviously in the middle of the categories, enough cases lead to uncertainties, overlaps, or differences of opinion that we should always question the resulting numbers. Additionally, while a lot of the discrepancies in the manner of death

classification have been linked to lack of resources or training or poorly organized institutional structures, all things which can be "fixed," we should nonetheless work toward being a bit more comfortable with the fact that death, like any other fact of life, cannot always be neatly fit in a category. This is a difficult proposition, but nonetheless one we have to consider.

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