

Abstract: Bodies of Evidence – Determining the Cause of Death and the Problem of Underdetermination

The aim of this talk is to address the problem of underdetermination as it relates to one of the central tasks of forensic medicine, namely determining the cause and manner of suspicious deaths. In particular, it will analyse the way in which forensic pathologists interpret available evidence in postmortem investigation in the light of different cultural beliefs and contextual factors surrounding the death. Determining the cause and manner of death involves numerous potentially value-laden judgments, which are partially influenced by the institutional and cultural context where the pathologist operates.

As the debate on the COVID-19 death rate demonstrates, determining the cause of a death can become controversial matter even in circumstances where no foul play is suspected (e.g., Pappas 2018). When a suicide, homicide or terminal occupational illness is a possibility, causal inferences related to past events and the death become even more contested. It has been argued that this is partially due to practices in forensic medicine not being evidence-based or standardized (Meilia et al. 2018; Meilia et al. 2020). Autopsy has the central position in knowledge production in forensic medicine (Timmermans 2007). Findings from tissues and biopsies are interpreted in the light of existing pathophysiological knowledge, toxicology, epidemiological studies, genetics, applied physics etc. (Meilia et al. 2018). Meilia et al (2018) lament that these practices tend to be more experience- than evidence-based and note that there is considerable inter- and intra-country variation. Moreover, deaths can be classified differently even by experts with similar backgrounds (Timmermans 2007).

In the talk, I will analyse the process of determining the cause and manner of death by applying Helen Longino's account about the role of background assumptions in scientific reasoning. According to Longino (1990, 41), "[w]hat determines whether or not someone will take some fact or alleged fact, x , as evidence for some hypothesis, h , is not a natural (for example, causal) relation between the state of affairs x and that described by h , but are other beliefs that person has concerning the evidential connection between x and h ". I will show that underdetermination as an epistemological problem is salient in determining the cause and manner of death. In addition to the analysis of the physical evidence, determining a cause and manner of death often require interpretation of the social and psychological circumstances and the history of the passed individual. For example, classifying a death as a suicide requires that it has been self-inflicted and intentional (Timmermans 2005). Ascertaining both of these criteria demand inferences that go beyond what the physical evidence tells the expert. Recognizing the role of background assumptions in the practice of forensic medicine can help to understand disagreements between the experts in the field.

References

Longino, H. (1990). *Science as Social Knowledge. Values and Objectivity in Scientific Inquiry*. Princeton: Princeton University Press.

Meilia, P. D. I., Freeman, M. D., & Zeegers, M. P. (2018). A review of the diversity in taxonomy, definitions, scope, and roles in forensic medicine: implications for evidence-based practice. *Forensic Science, Medicine and Pathology*, 14(4), 460-468.

Meilia, P. D. I., Zeegers, M. P., & Freeman, M. (2020). INFERENCE: An Evidence-Based Approach for Medicolegal Causal Analyses. *International Journal of Environmental Research and Public Health*, 17(22), 8353.

Pappas, S. (2020, May 18). How are COVID-19 deaths counted? *Live Science*. [Accessed 1.3.2020] <https://www.livescience.com/how-covid-19-deaths-are-counted.html>

Timmermans, S. (2005). Suicide determination and the professional authority of medical examiners. *American Sociological Review*, 70(2), 311-333.

Timmermans, S. (2007). *Postmortem: How medical examiners explain suspicious deaths*. University of Chicago Press.