

Negotiating Truth: Semmelweis, Discourse on Hand hygiene and Politics of Emotion¹

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Introduction

I am very grateful to have the occasion to speak in front of a scientific audience to whom Semmelweis was one of the most important figures. In my talk, I would like to explain why Semmelweis is an important figure to a discipline that is at first sight far away from medicine – i.e. political science.

By doing that, not only I shall cast a different light on the famous dispute over hand washing in Vienna of the 19th century but, more importantly, I shall challenge one of the common narratives of our times that medicine has now reached its ethical or societal limits and that this is the reason why it got caught in conflict with society, and with ethics in particular.

Semmelweis' story teaches us namely that, by definition, such conflicts with society are at core of any medical innovation or any scientific progress in general. It offers us a site to see that the limits of the society are constantly being reached and being hurt.

This is the reason why I speak about „negotiating truth” as a metaphor of describing scientific endeavours and I am going to emphasize during my talk that this negotiation is informed by emotions. [*In fact, the discussion we could follow during today's young investigators lecture pointed quite timely to such a negotiation between what is an “objective data” and, in particular, what kind of data is sufficient.*]

I start by emphasizing the aspects of a negotiation in Semmelweis' story that have made him an icon of medical history, history of science or theory of science and suggest that these can make him also a case for political science. I then briefly explain some of the milestones of the hand washing controversy which further illustrate what I mean by holding that truth gets negotiated and how I conceive of emotion's role in that negotiation.

Dispute over childbed fever

I declare before God that you are a murderer and the history of ‘childbed fever’ would not be too unfair if it remembers you as a medical Nero (quoted in Neuhauser 2004: 234).

Embarking upon a hostile campaign, full of emotions, as Semmelweis did and as you can see in this quote, is not something new but in fact the very core of every dispute, be it a scientific or a political one. Ignaz Philippe Semmelweis, a Viennese gynaecologist who wrote several letters to the doctors that did not want to accept his measure of hand washing used this tone quite often: He mobilized his associates and pronounced other doctors guilty of the deaths of young mothers. In the course of the escalating conflict, Semmelweis ultimately failed to have hand washing established as a hygienic practice of medical doctors, and instead he became an object of derision.

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While Semmelweis views were considered to be very questionable at his time, they are now deemed to be standard practice in every hospital. Hence, analysing current and historic sources can show how knowledge on establishing this "truth" were informed by emotions. What is more, not only we can develop a more subtle notion of scientific progress and scientific endeavours but we can also offer a novel perspective on politics.

Let me briefly summarize the famous story. In 1846, Semmelweis wrote in his diary that "*to born a child is as dangerous as the Lung infection of the first degree*" (Györy 1967). He refers "childbed fever", a sudden fever that occurs after child delivery. It was the observation that the mortality rate from childbed fever was much higher in his division (1st division) than at the 2nd division, which was run by midwives (Semmelweis 1862 & 1966), which gave Semmelweis the idea that some physician practice might be related to those deaths. After initial studies, he ordered his colleagues to wash their hands in a chlorine solution before each delivery (Flamm 2007). The hands of doctors harbour, Semmelweis argued, particles coming from autopsies and other medical interventions that subsequently infected women. He could not name these particles, for instance, he couldn't call them "germs", because he could not see them and could only surmise about their existence.

Although the mortality rate in his department dropped significantly immediately after the introduction of his measure of hand washing (Semmelweis 1966), Semmelweis still could not explain the link between dirty hands and childbed fever, and, moreover, his thesis did not correspond with the then-current miasmatic theory of epidemic influences (Wyklicky & Skopec 1983). Epidemic influences of childbed fever were thought to be associated with atmospheric-cosmic-telluric changes (as reports Lesky 1964). This referred to related concepts of hygienic measures of that time. The theory of contamination through contact, implied by Semmelweis' thesis, was new, and this became a point of dispute between him and other medical doctors.

Only in 1865, the year Semmelweis died, was his idea rehabilitated by Joseph Lister, who considered also Semmelweis' protocols (Neuhauser 2004, Porter 1997), and who showed that blood tissues scratched during childbirth become affected by "germs" on the hands of doctors, causing *septicaemia* (Porter 1997). Lister has banished the miasmatic theory, and he showed also that these germs can be killed in a chlorine solution (as describes Flamm 2007), which was also Semmelweis' suggestion.

Semmelweis as an icon

So how can we read this story with political lenses? In our times, Ignaz Philipp Semmelweis appears as an icon in many ways. Few beginning medical textbooks fail to mention "the pioneer of hand washing" (Eckhart 2009 or Porter 1997), or the "saviour of women" (Sillo-Seidl 1978). In fact, almost every current study in the field of hand hygiene uses Semmelweis as the example and the symbolic reference for the introduction of the practice of hand washing (e.g., Landen 2011, Telekes 2009 or Stewardson 2011). As Carter puts it, "*Semmelweis' work is absolutely pivotal in medical history*" (Carter 2002).

In that perspective, Semmelweis' dispute is used in the theory of science as the example of how innovation gets caught in the imaginations – and discourses as I will point out later – of what can be seen as traditional knowledge. Every innovation fights, and has to fight with the knowledge layers of its time. “Semmelweis reflex” – as theory of science puts it – is being used as a metaphor for our reflex-like tendency to reject or even fear new knowledge or evidence as it contradicts established values or beliefs.

It is also on the basis of these considerations that Semmelweis is often told to have failed simply because he could not prove his hypothesis that doctors infect the young mothers – and that he could have done this if he had used a microscope for example (see Gillies 2005). History of science – for its part – sees in the story of Semmelweis a typical example of a scientist, turning aggressive, being mad (or being seen as mad), being treated as a misunderstood figure that later times will nevertheless celebrate.

Semmelweis as a Case for Political Science

However, the approach I argue for, is different. Let us use the contrast between the rejection of hand washing of 19th century and its current wide acceptance as the cornerstone of medical hygiene as a site that tells us more about how scientific discoveries are implemented. Let us use Semmelweis as a showcase of how science is in a constant interplay with the society. Scientific findings emerge from societal conditions, such as the circumstances of childbed fever epidemic that have brought Semmelweis to its careful study. At the same time, these societal conditions hurt the scientific finding.

Let us therefore use the story as a site of how truth is produced. By doing this, we have to turn our attention away from those hypotheses trying to explain what would have happened if Semmelweis had a microscope, and the like. We have to turn away from the explanation that behind his failure is the aggressive way in which he wanted his theory be accepted. If we want to go inside of the truth production we have to analyse the knowledge that is used both to support and to reject his thesis in order for us to understand the role of “knowledge” and the role of “emotions” in production and reception of this knowledge. By this, we enter the area of politics.

Politics as a zone of negotiation

Politics, in this case, is not thought as some concrete sample of institutions or the evaluation of strategic actions of political actors as you might know it from the general political jargon and the mainstream approaches to political science. Since the work of the French philosopher Michel Foucault and other thinkers being called “post-positivist” or “poststructuralist” the notion of politics goes beyond the narrow definition of institutions, actors and their mutual interactions (Foucault 2004, 2008 or Howarth 2000).

Politics is a zone of negotiation of knowledge (see e.g. Durnová 2013, Fischer 2009 or Gottweis 1998). Poststructuralist (or post-positivist) political science investigates this zone by observing who claims what and where; by comparing different sorts of knowledge – such as truth claims, statistical data, assumptions, hypotheses, and the like. It further searches how the

causal links between these sorts of knowledge are established and, in particular, why some truth claims or assumption are more likely to get support while others are being rejected. Most importantly, this approach aims at identifying patterns of argumentation by that the latter get accepted as „truth“ or as the right decision in particular time and space.

What is interesting for us here is that, in the development of his theory, Semmelweis proceeded in the same way: He carefully observed the autopsy protocols of dead mothers and compared these protocols to autopsies of their babies that died of childbed fever as well. He compared them also to the autopsy protocol of one of his colleague, Jakob Kolletschka, who died after being cut in his finger during autopsy. It was this report, which has been fundamental in Semmelweis' rejection that childbed fever was a female body related disease.

Semmelweis also compared the mortality rates between the first and the second divisions and identified the very significant high mortality rate being only in the division run by doctors. He therefore searched for a causal link between doctor's practice and the epidemic of childbed fever. His argumentation – namely that doctors cause the disease by their hands – came from this procedure.

At this level, we can follow how truth is produced through interaction. Imaginations about the female body, about contamination and the possibilities to investigate either the female body or the contaminations; brief the knowledge on childbed fever get arranged and organized through particular power structure. The latter entails subtle mechanism of governing the knowledge about both the disease and the hand washing practice, of governing through, by whom the issue gets on the negotiation table, and who is potentially being accused by it. Through this, we can denude processes of regulation of that knowledge, its negotiation properly speaking.

Discourse on Semmelweis and the role of Emotions

So how would the story of Ignaz Philippe Semmelweis look like if read through political lenses? In brief, as the period sources show, the practice of hand washing was „uncomfortable“ and „time consuming“, or it was simply considered as not really necessary since there were no proofs, no objective data so to say. For example, the measure of washing the hands in a chlorine solution demanded costs and the division complained that this is too expensive and so asked for the evoked objective data in order to justify these costs (something we know actually from current epidemic as well). What is more, the generally adopted theory of atmospheric changes made it more likely to see the origin of the spreading out of child bed fever in the walls of the 1st division, rather than on the hands of the doctors. Another example is the period imagination of the female body and the related accepted causality between childbed fever and female specific sensations: such as “shame” of the female patients of being examined by male doctors, the link of the illness to breast-feeding or to traumatic experience during pregnancy or birth (see also in de Costa 2002).

In a similar vein, it was a logical consequence that accepting Semmelweis thesis would mean to accept the doctors' guilt of all the deaths of young mothers before. This was a concern especially in so far as the Viennese medical community was up to building a fame on its gynaecology expertise. Overall in Europe, the establishment of gynaecology as a

distinguished discipline aimed at improving birth care and the epidemic of child bed fever was affecting this aim quite considerably (see also Eckhart 2000 or Nuland 2003). With these circumstances, we come to another important aspect, which was the concurrence between the 1st and the 2nd division, run by midwives whose reputation was much better concerning the mortality rate which cause and increased popularity among the young mothers.

In examples as these, we see how discussing a scientific discovery, actors must cope with “beliefs” (such as notion of the female body, the miasmatic theory) and values (the pride of doctors, the concurrence toward midwives, the generally accepted value of the female body) related to practices they want to change especially because these novel practices disturb the “values” and “beliefs” that are part of already established practices. It follows that the role of discourse should be highlighted when observing medical innovation, as the knowledge that both shapes our view on the world and is also shaped by it.

The way these values and beliefs were linked to the arguments of the dispute can be uncovered by the duality of emotions and discourse. Emotions are considered neither as feeling nor affect but as positions that denude how people judge certain values and beliefs, how they classify them as “good” or “bad” (see e.g. Durnova 2013 or Hochschild 1998). Again, we see that the positions to the values (pride, shame, etc.) and beliefs concerning both hand-washing (being expensive, time-consuming, etc.) and childbed fever (being female-related, being spread through the walls rather than through the hands) have finally made Semmelweis’ thesis untrue.

Conclusion

The Semmelweis case demonstrates that a practice of hand washing has been established along a scientific dispute where emotion, discourse and power have played crucial roles. It explains how truth comes to being along the negotiation of emotions and discourses and thus refines our understanding of politics that operates by truth. Let me conclude with the quote of one of the studies on hand hygiene using the legacy of Semmelweis: “*Hand hygiene is the single most important intervention for reducing healthcare associated infections and preventing the spread of antimicrobial resistance. [...] But why - as we mark 150 years since the publication of Ignaz Semmelweis’ landmark monograph on the subject - do we continue to repeat it?*” (Stewardson 2011: 22). My answer to this rhetorical question, and my conclusion of this talk, is that we have to repeat it because this is what science is about: about negotiating truth. We shall see this as a challenge, as a device, and not as a problem.

References:

- CARTER, J. M. 2002. Importance of hand-washing. *Journal Natal Medical Association*, 94, 11-12.
- DE COSTA, C. 2002. The contagiousness of childbed fever: a short history of puerperal sepsis and unit’s treatment ». *MJA*, Vol. 177, 2 / 6, 668 – 671.
- DURNOVÁ, A. 2013. "Governing through intimacy: Explaining care policies through ‘sharing a meaning’." *Critical Social Policy* 33(3): 494-513.
- ECKART, W. 2009. *Geschichte der Medizin. Fakten, Konzepte, Haltungen*. Berlin, Springer.
- FLAMM, H. 2007. Von der Antiseptik zur Aseptik, *Wiener Klinische Wochenschrift* , Vol. 119/23 – 24, 685 – 696.

- FISCHER, F. 2009. *Democracy and Expertise: Re-Orienting Policy Inquiry*. Oxford University Press.
- FOUCAULT, M. 2004. *Naissance de la biopolitique cours au Collège de France, 1978-1979 édition établie sous la direction de François Ewald et Alessandro Fontana par Michel Senellart*, Paris, Gallimard Seuil.
- FOUCAULT, M. 2008. *Le gouvernement de soi et des autres cours au Collège de France, 1982-1983 [1] édition établie par Frédéric Gros sous la direction de François Ewald et Alessandro Fontana*, Paris, Gallimard Le Seuil.
- GILLIES, D. 2005. Hempelian and Kuhnian approaches in the philosophy of medicine: the Semmelweis case. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 36, 159-181.
- GOTTWEIS, H. 1998. *Governing molecules: the discursive politics of genetic engineering in Europe and the United States*, Cambridge, Mass., MIT Press.
- GYÖRY, T. 1967. (Ed.) *Semmelweis' Gesammelte Werke*. Wiesbaden.
- HOCHSCHILD, A. 1998. "The Sociology of Emotion as a Way of Seeing." In SIMON J. Williams and Gillian BENDELOW (eds.), *Emotions in Social Life: Critical Themes and Contemporary Issues*. London and New York: Routledge.
- HOWARTH, D. 2000. *Discourse*, Buckingham: Open University Press, 2000.
- LANDEN, M. 2011. Was Semmelweis' registry in reality or power tool for the authorities? *Lakartidningen*, 108, 1504-5.
- LESKY, E. 1964. *Ignaz Philipp Semmelweis und die Wiener Medizinische Schule*, Wien ; Graz [u.a.], Böhlau.
- LOUDON I. 1995. *Childbed Fever: A documentary History*. Garland Publishing Inc.
- MIKSCH, W. 1967. *Retter der Mütter. Doktor Semmelweis kämpft gegen den Mörder d. Mütter, das Kindbettfieber*, Wien, Verl. f. Jugend u. Volk.
- NEUHAUSER, D. 2003. "Ignaz Semmelweis and the birth of infection control". *Quality and Safety of Health Care*, Vol. 13, 2004, 233 – 234.
- NULAND, S. B. 2003. *The doctor's Plague- Germs, Childbed Fever, and the Strange Story of Ignác Semmelweis*. Atlas Books/W.W: Norton & Company, New York/London.
- PORTER, R. 1997. *The Greatest Benefit to Mankind. A Medical History of Humanity*. New York- London, W. Norton
- SEMMELEWEIS, I. P. 1862. *Offener Brief an sämtliche Professoren der Geburtshilfe*. Wien aus der königlichen Ungarischen Universitätsbuchbinderei.
- SEMMELEWEIS, I. P. 1966. *Die Aetiologie, der Begriff und die Prophylaxis des Kindbettfiebers*, New York u.a., Johnson.
- SILLÓ-SEIDL, G. 1978. *Die Wahrheit über Semmelweis das Wirken des großen Arzt-Forschers und sein tragischer Tod im Licht neu entdeckter Dokumente ; eine Bild-Biographie*, Genf, Ariston-Verl.
- STEWARTSON, A. & PITTET, D. 2011. The art of medicine Ignac Semmelweis-celebrating a flawed pioneer of patient safety. *Lancet*, 378, 22-23.
- TELEKES, A. 2009. Lessons from the life and work of Semmelweis (1818-1865) and its actuality in 2009. *Orvosi hetilap*, 150, 2200-3.
- WYKLICKY H. & SKOPEC M. 1983. Proceedings of the First International Symposium on Hospital-Acquired Infections Vol. 4, No. 5, (Sep. - Oct., 1983), *Infection Control*, 367-370.