corporating the cumulative condition and building on Cartwright's initial work to follow suit, and Laycock's argument is not the sweeping knock-down critique he takes it to be.

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Workshop on *Precarious Matters*, Max Planck Institute for the History of Science, Berlin, Germany, 22-24 March 2007

Sponsored by the Deutsche Forschungsgemeinschaft (DFG), this workshop was organized by historian of science (pharmacy) Bettina Wahrig from the Technical University of Braunschweig and her group and by historian of science (biology) Hans-Jörg Rheinberger from the hosting MPIWG.

Precarious matters – which should be and was read as precarious substances (in German, *prekäre Stoffe*) during the meeting – are substances which usually have a very strong physiological performance, both negative or positive. Thus, these substances are "powerful and autonomous/dangerous" (from the workshop description on the MPIWG website). The aim of the workshop was "to analyse 'precarious substances' in the different stages of their trajectories – experimental establishment, institutional stabilization, social activation and control – in order to compare or distinguish them" (*ibid.*).

After an introduction by the Braunschweig group (Viola Balz, Heiko Stoff, Alexander von Schwerin, and Brigitte Wahrig) thirteen papers were presented. Most of the speakers came from German speaking countries and each one from Greece, France, USA, and Israel; the main conference language was English.

Volker Hess (History of Medicine, Charité, Humboldt University Berlin) told the story of the quack Johann Gottlieb Grabe who in the beginning of the 19th century claimed to heal by putting his hands on certain body parts. The assumed healing effect was called "animalistic magnetism" and considered to be substantial. Hess showed that stuff can be assumed as precarious even if there is no measureable substance at all and, moreover, that precariousness can be performative to a large extent.

Axel Helmstädter (History of Pharmacy, University of Marburg) gave a talk about the *Arndt-Schulz law* which claims a non-linear relation between the dose and the effect of an agent. Helmstädter demonstrated that in modern pharmacology, with its prevailing molecular point of view, this law cannot be considered a natural law because therapeutic substances can cause a variety of different effects. Thus the dose-effect relation becomes much more complex than Arndt and Schulz suggested.

With an emphasis on the influence of involved scientists and administrators, Carsten Reinhardt (MPIWG, now Science and Technology Studies, University of Bielefeld) presented a study about the historical development of the list of threshold limit values for workplace substances in Germany (MAK-Liste). His historical example illustrated how precariousness has been construed or defined rather than discovered as a natural property.

Beat Bächi (History of Technology, Federal Institute of Technology Zurich, Switzerland) talked about how Hoffmann-La Roche invented application fields for synthetic Vitamin C and created new disease symptoms for Vitamin-C-avitaminosis. Impressively, Bächi presented Vitamin C as a precarious "substance in search of a disease or function".

Otniel Dror (History of Medicine, Hebrew University of Jerusalem, Israel) gave a presentation on the cultural and biological potencies of adrenaline.

Among other aspects he pointed out that dying from emotions can be rationally explained by referring to the properties of adrenaline.

The specific story of hormones synthesized by Ciba (Switzerland, 1914-1927) and their experimental and administrative stabilization and destabilization was told by Christina Ratmoko (Social and Economy History, University of Zurich).

Maria Rentetzi (Humanities, Social Sciences, and Law, National Technical University of Athens, Greece) presented a summary of her studies on radium. She called radium a "trafficking material" that moves between or is transferred across different worlds, such as the medical world and the world of cosmetics.

Soraya Boudia (Interdisciplinary Research in the Sciences and Technology, University of Strasbourg, France) talked about radioactivity as a property that is deeply connected to matter (if not stuff). Her focus was on the global impact of radioactive fallout that prompted international regulations.

Norman Pohl (Institute for the History of Science and Technology, Technical University of Freiberg, Germany) compared the precariousness of cyanide and vanillin. He suggested considering vanillin positively precarious and cyanide negatively precarious.

Ulrike Thoms (History of Medicine, Charité, Humboldt University Berlin) presented a paper on antibiotics in foods. As to the application of these substances in both the human and the veterinary fields it is most intriguing how their impressive effectiveness can turn into infectivity by metabolizing activities of the target microorganisms.

The talk by Barbara Orland (History of Knowledge, Federal Institute of Technology and University of Zurich) was on the concept of nutrients, or "About the invention of good things that can harm your body", as she put it in her subtitle.

Axel Hüntelmann (History of Medicine, Universities of Berlin and Heidelberg) presented a social history of a tuberculosis remedy derived from turtle tuberculosis bacteria by Friedrich Franz Friedmann.

The last speaker of the workshop was Nicolas Langlitz (Anthropology, University of California, Berkeley). He spoke about pharmacovigilance, which are practices referring to risk assessment and which he presented as post-(black)market surveillance.

The workshop was well organized, and there was enough space for discussions. Similar events like the meetings on "Stuff Histories" (*Stoffgeschichten*) at the University of Augsburg (put forward by Jens Soentgen) seem to become increasingly interesting to both historians and philosophers. Although the concept of a "precarious stuff " is not really well defined at the moment – which Hans-Jörg Rheinberger hinted at in his comment during the workshop – most of the stories told here are very useful for the philosophy of chemistry, too. Tthey remind us, for example, that the specific interests in and the application clusters of certain substances do have an impact on the conceptions of these substances. However, I shall add two critical comments: First, the words "precarious matters" from the workshop title can easily lead to misconceptions because "matter" has a physicalistic connotation. Second, while the workshop description considered the history of precarious substances as a part of the "history of things", I would love to see precarious substances as part of the "history of stuff".

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