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History of Science

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Born in 1973 in Bielefeld
Studied History, Philosophy, and Journalism at the Universität Hamburg, Université Paris I, and Humboldt-Universität zu Berlin

PROJECT

Biological Motion

I am currently working on a book about biological motion.
The book takes its departure from my previous research on the notion of development that arose around 1800. I have argued elsewhere that the concept of development was invented anew in this period, when the analysis of development was translated into an analysis of motion, notably rhythmic motion. I want to incorporate those insights and elaborate on the role of motion and its representations in modern biology in a broader and more systematic perspective.
The basic premise of the work is that one of the central features of modern biology is its ability to account for organic change: the growth of a plant, the development of the embryo, the metamorphosis of a larva into a butterfly or even the transformation of a healthy into a diseased body are all phenomena in which change cannot be accounted for in simple physical terms.
Developing a few historical case studies from the 19th century to the latest research, my aim is to explore how biology developed a conceptual framework, practices, ways of seeing, forms and media of representation to reformulate these transformations in terms of motion.

Recommended Reading

Wellmann, Janina, ed. Cinematography, Seriality, and the Sciences. Cambridge: Cambridge University Press, 2011. (Science in Context 23-24.)
Wellmann, Janina. Die Form des Werdens: Eine Kulturgeschichte der Embryologie, 1760-1830. Göttingen: Wallstein, 2010.
-. "Die Metamorphose der Bilder: Die Verwandlung der Insekten und ihre Darstellung vom Ende des 17. bis zum Anfang des 19. Jahrhunderts." NTM: Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin 2 (2008): 183-211.

TUESDAY COLLOQUIUM, 11.02.2014

"Tell me how to find you and I will tell you what you are." On the motion of animate beings

My project at Wiko is about the history of biological motion. Surprisingly, very little has hitherto been written on the epistemology of motion in the life sciences - compared, for example, to studies on the concept of motion in physics.

But motion was always a central category for the apprehension and conceptualization of living processes. My thesis is that much of the history of modern biology could be told as the story of attempts to make sense of biological motion. Historically considered, there is no single kind of "biological motion", but a multitude of ways in which motion was perceived and envisioned in and around organisms.

The basic premise of the work is that one of the central features of modern biology is its ability to account for organic change: the death of a cell, the growth of a plant, the development of the embryo, and the metamorphosis of a larva into a butterfly are all phenomena in which change cannot be accounted for in simple physical terms. For all and each of these examples, biology (and medicine) had to develop a conceptual framework that would enable a rational, "scientific" explanation of these transformations. In many if not most of these cases, the explanation amounted to a reformulation of these phenomena in terms of motion.

I argue that in the history of modern biology the epistemology of motion is a product of practices and theories, ways of seeing and methods of representing, techniques and media of visualization, all inextricably interwoven.

In my talk I will present three historical case studies. In the first part I will argue that the concept of development when it first emerged around 1800 was framed as motion. In the second I will examine whether and to what extent the use of cinematographic techniques around 1900 introduced a new epistemology of motion, and in the final part I will look at recent attempts to simulate motion, especially of cells.

Two questions I would like to think about in particular: 1) How and in what respect are the representation and conceptualization of motion linked? 2) What concepts of animacy are put forward in the way motion is observed, experimented upon, and visualized?

Wellmann, Janina (Heidelberg,2018)

Model and movement : studying cell movement in early morphogenesis, 1900 to the present
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=1680630466

Wellmann, Janina (New York,2017)

The form of becoming : embryology and the epistemology of rhythm, 1760-1830
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=870397672
Form des Werdens
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=870397672

Wellmann, Janina (Cham,2015)

Folding into being : early embryology and the epistemology of rhythm
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=1680620398

Wellmann, Janina (2011)

Science and cinema
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=767899776

Wellmann, Janina (2010)

Formen falten : die Metamorphose der Membranen bei Christian Heinrich Pander
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=815897979

Wellmann, Janina (Göttingen,2010)

Die Form des Werdens : eine Kulturgeschichte der Embryologie ; 1760-1830
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=61469650X
Wie das Formlose Formen schafft. Rhythmus und die Organisation des Lebendigen, 1760 bis 1830
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=61469650X

Wellmann, Janina (2008)

Keine Ikone der Entwicklung : die "Icones embryonum humanorum" von Samuel Thomas Soemmerring
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=796541523

Wellmann, Janina (2008)

Hand und Leib, Arbeiten und Üben : Instruktionsgraphiken der Bewegung im 17. und 18. Jahrhundert
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=79654090X

Wellmann, Janina (2008)

Die Metamorphose der Bilder : die Verwandlung der Insekten und ihre Darstellung vom Ende des 17. bis zum Anfang des 19. Jahrhunderts
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=76790138X

Wellmann, Janina (2003)

Wie das Formlose Formen schafft : Bilder in der Haller-Wolff-Debatte und die Anfänge der Embrylogie um 1800
https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=767899997