Gender, Brain and Health

A cross-disciplinary seminar, 20-21 May 2021

Abstracts of keynotes

Annelies Kleinherenbrink: ***Risk and responsibility in online women's brain health discourses***

In this talk, I will share insights from our research on online women's brain health discourses. A range of campaigns and platforms have addressed a wide audience to raise awareness about women's brain health, and to highlight the importance of using sex as a biological variable in health-related brain research. I will discuss how these outlets have thematized risk and responsibility, and I will relate this to the influence of gendered and neoliberal norms, to the tensions between (strategic) essentialism and intersectionality, and to the promises and perils of plasticity-based arguments. This will show how online women's brain health discourses, whilst they work towards improving women's wellbeing (e.g. by problematizing health disparities, the male bias in medical research, or the undue burden on women as formal and informal caretakers), are open to feminist critiques. Hopefully, this talk will generate discussion about strategy in women's brain health policies and campaigns: how are women represented and interpellated as a biomedical category, how is risk construed, and who is deemed responsible for optimizing women's health?

Sarah S. Richardson: ***Sex as a Biological Variable mandates: All we've lost***

TBA

Gillian Einstein: ***Situated Neuroscience: Bringing sex and gender together with Very Mixed Methods***

Studying sex without gender and gender without sex leads to an artificial binary and a huge gap in our understanding of human health and the central nervous system. Bringing together sex with gender is a critical next step toward remediation. In this talk, I describe what I call, "Situated Neuroscience", an approach to enquiry about the body that situates the nervous system within the whole body as well as within the culture—yielding what Liz Grosz calls, the corporeal body. Looking at cultural practices most often considered in terms of their effects on the reproductive system and the gendered body such as premenstrual syndrome, pain and immigration, ovarian removal, female genital circumcision/mutilation/cutting (FGC), and gender affirmation therapies, my work takes a situated approach using what I call, Very Mixed Methods: the combination of qualitative, quantitative, and physiological approaches. Unifying sex with gender allows us to better understand how gendered practices affect the corporeal body via the central nervous system. In doing so we learn that contextualized meanings of the practices lead to individualized corporeal responses.

Abstracts of workshop presentations

Marco Hirnstein: ***Why *good* brain research is important and how it can be accomplished***

As a neuroscientist interested in sex/gender, I am aware of several problems arising in empirical research: studies are designed inappropriately, with too few participants; statistical analysis is carried out with questionable analysis tools; results are not replicable; and

conclusions about sex/gender differences sometimes misrepresent the findings. Rather than stopping that kind of research altogether, however, I shall argue that we need to do it better. There are a number of physical and psychological conditions in which sex/gender play a critical role and without delineating their underlying biological and sociocultural mechanisms, it will be difficult if not impossible to understand how and why these conditions develop and how they can be treated better. In my presentation, I will take stress and its impact on mental and physical health as an example for why sex/gender research is needed. Next, I will give examples for problematic practices in the neuroscience literature on and what can be done to study sex/gender effects better in the future.

Helene Hjelmervik: ***Sex/gender differences and estrogen effects on the prefrontal brain region – of relevance for understanding sex-specific vulnerability in mental disorders?***
Several mental disorders (e.g. mood disorders, schizophrenia, attention hyperactivity deficit disorder, Alzheimer's disease) differ markedly in their onset, prevalence, progression and /or severity between the sexes. Furthermore, the onset of mental disorders is often related to puberty, as well as menopause in women, periods in which hormone levels change dramatically. Understanding sex differences and differential impact of sex hormones between men and women on brain organization, is thus critical for understanding and developing optimal sex-specific therapies for disorders that affect men and women differently. The current project investigated sex differences and influence of fluctuating hormones across the menstrual cycle on cognitive networks in the brain. The results suggest that women engage the prefrontal lobe more during visuospatial tasks and show higher prefrontal connectivity during rest as compared to men. In addition, an estrogen-related menstrual cycle effect was observed in cognitive control abilities. Although the study did not indicate sex/gender differences in hemispheric asymmetry, women were found to be more interconnected in fronto-parietal networks. The observation of the prefrontal cortex as particular sensitive to sex (hormonal) influence could be discussed in light of sex-specific prevalence of mental disorders. For example, attention deficit/hyperactivity, a disorder of higher male prevalence, has been found related to reduced volume or hypoactivation in various frontal regions. Furthermore, neuroprotective effects of estrogen for Alzheimer's disease might partly relate to the influence of estrogen on the prefrontal cognitive control abilities. In sum, the results from the study might mirror some neuronal underpinning for men and women's sex-specific vulnerability for developing certain mental disorders.

Kari Jegerstedt: ***A literary investigation into neuropsychoanalytical theories on gender, brain and health***
In several essays and novel, the Norwegian-American, feminist author Siri Hustvedt has been probing into questions of health and brain through a neuropsychoanalytical perspective. This work has also earned her a place at the regular workshops at the International Neuropsychoanalytical Association, which she has frequented as often the sole humanities thinker. This paper asks what a literary, feminist perspective can tell us about the gendered aspects of the brain, neurosciences and health. Special attention will be given to the autobiographical essay *The Shaking Woman, or the History of My Nerves* (2010), and the two collections of essays *Living, Thinking, Looking* (2012) and *The Delusions of Certainty* (2017).

Emily Maddox: ***A critical look at the autism/gender variance correlation, as discussed in emerging psychological literature.***
Autism – a neurobiological condition – has a long history of being entangled with contemporaneous understandings, and explorations, of gender and sex differences. In this paper I will present a brief history of some of these gendered constructions of autism before

moving onto the present ways that autism is being mobilised in psychological research into transgender and gender variant individuals, namely, this research asks; is there an overrepresentation - and therefore potentially a causation – of autism present in trans and gender variant individuals? This emerging psychological research is presented as being of value in providing the right care pathways for transgender or gender questioning individuals. I will discuss the merits and problematics of this research angle through using data I have collected on late diagnosed autistic individuals.

Linda Weichselbraun: ***Pre Sexing, Re-Sexing and De-Sexing: Technoscientific engagement in "transgender brains" beyond prenatal sex reversal***

Associations between the brain and the transgender phenomenon have existed in scientific, medical and public discourses at least since the mid 1900s. In the 1990s, ideas of the "transsexual brain" as sex-reversed due to prenatal hormone exposure gained prominence, and even if not left unchallenged, such conceptions largely color scientific and broader cultural imageries of "transgender brains" – and experiences – also in contemporary times. Conceptions of sex-reversed "transsexual brains", as well as the practices and social implications that surround them, is understood as a particular way of sexing the brain. In this presentation such sexing will be bracketed. Instead, three other examples of technoscientific engagement in brains of transgender persons will be highlighted, which are here understood as: pre sexing, re-sexing and de-sexing. Pre sexing denotes engagement where EEG technology is utilized to associate trans with brains without sexing them. In re-sexing, the associations between transgender and brains downplay conceptions of gender identity as hardwired, and instead forward ideas of a brain-based gender-specific body image. In de-sexing, brain imaging technology is used in ways that challenge a binary understanding of sex/gender and instead facilitate conceptions of the brain as a mosaic between "male" and "female" features. The presentation builds on preliminary findings from a multi-sited ethnography on "transgender brains", and aims to invite to a cross-disciplinary conversation on the utilities and pitfalls of sexing brains, as well as of thinking of brains in terms of different "kinds".

Claus Halberg: ***Gender Identity – a thorn in the flesh of Embodied Cognition?***

Since the publication of Varela, Thompson & Rosch's book *The Embodied Mind: Cognitive Science and Human Experience* in 1991, a so-called "embodied" or "enactive" approach to cognitive science has increasingly mounted a challenge to reigning orthodoxies in the field. It has pushed back against two basic and interrelated theoretical commitments in particular: 1) that cognition is "all in the head", i.e., chiefly a brain process, with the body-beyond-the-brain merely supplying sensory inputs and effectuating motor outputs; and 2) that all cognition involves computation over representations with semantic or informational content. Against this picture, defenders of embodied/enactive cognition argue, first, that cognition, especially in its most basic modalities (perception, emotion, and self-awareness), constitutively – not merely causally – cycle through both body and environment, and second, that cognition is more a matter of engaging with worldly affordances than of representing how it is in the world.

It is now generally assumed that embodied-enactive cognition has something going for it when it comes to the most basic modes of cognition, such as sensori-motor, problem-solving interactions with an actual environment. But critics remain unconvinced that it can adequately account for so-called higher modes of cognition that do seem to involve contents represented by the subject "in the head". In this presentation, I ask whether gender identity – an individual's sense of (non-)belonging to a particular sex/gender category – might be precisely such a form of cognition, hence among the potential challenges to embodied-

enactive cognition as an encompassing framework within (the philosophy of) cognitive science.

Jill Halstead: ***Social Acoustics: Dementia, collective body memory and radical care***

Seventy percent of people with Alzheimer's Disease are women and according to the *Women´s Brain Health Initiative*, "you can´t ignore a number that big". Other numbers too big to ignore include the eighty-five to ninety-five percent of women who make up those employed in direct care and support-providing jobs for those living with dementia specifically, and elders more generally. From "bench to bedside to communities" there is much work to be done if we are to better understand the ways sex and gender relate to the increasingly big numbers of people who live and work with dementia.

In this paper I will focus on how such numbers play out in actual scenes of dementia care, where patterns of everyday life interaction and social activity occur through disintegrating memory, language loss and sensory disruption. Using an example from my musical practice in such a scene, I will outline how embodied listening can offer important routes to interaction through the way sound moves us to move, be moved and move with others. Drawing on the field of enactive embodiment, and thinking specifically with Thomas Fuch´s concept of *collective body memory,* I will explore the dynamic embodied knowledge of participatory musical experience - where memory exists as a knowing how, rather than just remembering what. I will argue that *collective body memory* may offer important ways to understand how dementia is lived through sexed and gendered bodies, whilst also having potential in developing forms of radical care based on arts practice.