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The brain, the person, and the social. Probing neuroscientific ideas and practices from STS & history of science perspectives. Zurich: Johannes Bruder, eikones NCCR Iconic Criticism, University of Basel; Svenja Matusall, Chair for Science Studies, ETH Zurich, 23.06.2011-25.06.2011.

Reviewed by Svenja Matusall

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The brain, the person, and the social. Probing neuroscientific ideas and practices from STS & history of science perspectives

Looking in any daily newspaper of the (Western) world, we will see shiny images of active brains, showing âred spots of greedâ, the differences between Democrat and Republican brains or the centres for love and lust. Neurochemical substrates for attachment as well as for prejudices are presented to a broader public. We learn that reason is eliminated during shopping and that helping others might activate the brainâs reward system. Gender differences, deception, voting and shopping behaviour, sexual preferences, peer pressure, video games, meditation â the list of topics on which neuroscience claims to have a say is endless. Research formerly dominated by social sciences or humanities (marketing, pedagogy, psychology, philosophy, art history etc.) is increasingly studied by neuroscience and thus disciplinary boundaries are getting blurred. Particularly important for explaining human behaviour are the imaging devices used in neuroscientific research such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG). Up-to-date imaging techniques produce compelling pictures, which are readily published in popular media on account of their efficacy. Not least, media coverage and the spillover of neuroscientifically-produced accountability into court proceedings are changing the social relationships. The workshop âThe brain, the person, and the socialâ aimed to bring together young researchers on doctoral and post-doctoral level investigating the complex interrelations

between the brain (as an object of research and centre of the self), the person (as centred on the brain and the social environment), and the social (as the environment in which brain and person flourish and which may shape the brain).

In his keynote address on âThe Brain â Nature meets culture through agencyâ, ANDREAS ROEPSTORFF opened the discussions by observing that the brain has left the realm of nature and that its location is now renegotiated between the spheres of nature and culture. Moreover, he argued that it takes a lot of culture to represent the brain as if it was nature, taking into account that the brain as visualised in a relay of a cooperating subject and the scanner is a highly artificial construct. On a conceptual level, he pointed out that a novel perspective on the self is arising and turning into research practice: of âyou are your brainâ. Entailing questions of agency and who or what is in fact acting were taken up in many discussions during the workshop.

Several presentations dealt with the question of brain modulation and enhancement. GRETA WAGNER presented field work on how fairness was perceived among US college students when discussing cognitive enhancers. She pointed out that the unfair organisation of society was considered to exceed possible inequalities in the access of enhancing drugs: Lifeâs not fair, so why we should we be fair? JONNA BRENNINKMEIJER argued

in her historical perspective on neurofeedback that the brain has become both an agent and something to take care of and that thus the notion of self changes when these technologies are used. The self is separated from an (autonomous) brain. PANTEA BASHI und MELIKE SAHINOL discussed how neuro-knowledge is converted into both technology (e.g. deep brain stimulation) and into marketing approaches. Also in these cases, they argue, an ambivalent perspective on the brain is required, seeing it at the same time as an epistemic object and as an organ of the organism. Other papers, too discussed the problem of applying neuro-knowledge to other areas of research and social practice. BRIAN CASEY asked what brain imaging can provide for psychiatric practice but equally how brain imaging has furthered one certain branch of psychiatry, namely biological psychiatry and how this may lead to brain centered perspectives on mental illnesses. CHRISTINA PLAFKY presented empirical work on the question if and how practitioners of juvenile justice in Scotland implement neuro-knowledge into their practice and comes to the conclusion that it depends on personal preferences. A general impact on juvenile justice practice has to be neglected to date. GEORGIA-MARTHA GKOTSI discussed the use of neuroscientific expertise as evidence in US court cases and argued that the languages of neuroscience and law are so fundamentally different that translation of knowledge from one sphere to the other is essentially difficult. Moreover, the notion of responsibility is due to change in this process. EMMA ZIMMERMAN presented a study investigating the impact of neuroscientific experiments on applied ethics, focusing on the problem of compatibility of different kinds of knowledge and the question whether neuroscience has something new to contribute.

Not only the impact of neuro-knowledge on society was discussed during the workshop, also the impact of society on neuroscientific concepts was explored. NICHOLAS STÄCKLIN presented the case history of how the prairie vole became a model for human monogamy and sociability and showed how the interpretation of the rodent's behaviour changed with changing perspectives on 'normal' human behaviour. SVENJA MATUSALL argued in her paper that while discourses about sex and gender as well as political practice and life realities of men and women changed, gender/sex brain research is still busy inscribing historically grown orders into biology. LUTZ FRICKE situated growing research on the adolescent brain in discourses about economic and social cost of ill-health, discourses rendering teenagers as a risk group, and notions about neuroplasticity. JOHANNES

BRUDER discussed concepts of the mind in cybernetics and contemporary brain imaging and argued that to fundamentally different concepts of computing are employed as analogies for the mind and the brain. While cyberneticists refer to physical circuits, imaging neuroscience focusses in emergent functional networks.

In her concluding remarks, BEATRIX RUBIN asked why it is the brain that gets so much attention and why the (neuro-)lab coat is so attractive for some social scientists while genetics were met with more overt hostility. Why might we trust more in neuro-technologies than in teachers or rituals? Beatrix Rubin also stressed that neuro-knowledge is not only invading other areas of knowledge but also calls upon. Moreover she observed that social sciences are mostly talking about neuroimaging when discussing neuroscience. In contrast to this focus on imaging it has to be acknowledged that neurosciences are as diverse as the social sciences and that imaging is only a small, even peripheral part of it. Yet, we have to ask why it has so much impact on public discourse.

The overarching theme of workshop discussions was the notion of travelling knowledge: How does neuroscientific research change practice and vice versa? What happens once neuroscientific findings leave the lab? When does neuroscientific knowledge become interesting for other disciplines? Is it a way of dealing with intra-disciplinary epistemic crises? What role do funding policies play in the diffusion of neuro-knowledge into other areas of research and practice?

In a historical perspective, each society defines the brain it requires. Some examples were discussed during the workshop: The isolated computer and the interest in understanding and developing hardware of the era of cybernetics is transforming into the focus on interacting computers and networks. The same is true for the brain: the interest shifts from structure to function and the brain in interaction with other brains is in the focus of attention. Changing notions on family life and diversity of lifestyles influence the way in which the social is defined that is then located in the brain. Lastly, the chemicals used for modulating the brain changed with changing social demands. While in the 1950s, valium (sedating) was the drug of choice and psychedelics (altering modes of consciousness) in the 1970s, now stimulating drugs (enhancing cognitive skills) are fashionable both by users and in academic discourses.

The discussion was rather critical in the question what neuroscience can contribute to understanding the

person and the social or more generally, whether the prefix 'neuro' can in fact tell anything new. While (cognitive) neuroscience might generate interesting insights about how the brain works, so far neuroscience did not provide new insights about how more complex phenomena of the social, political and cultural arenas work. This again is a problem of translation and of different approaches towards the world. For neuroscientific experimentation, complex phenomena have to be broken down into smaller parts, which can be studied by quantitative experiments. Yet, this approach assumes implicitly that complex processes can be entirely explained by studying its smaller components, a notion compatible with positivist approaches dominant in the natural sciences but not with more hermeneutic approaches of qualitative social sciences and humanities. However, merely criticising that neuroscientists make too broad assumptions about implications and applications of their research in other fields of knowledge and practice is not enough. Rather, a critical dialogue with neuroscientists as well as undergraduate training in critical reflections of scientific practice appear to be more suited for trying to bring hermeneutic approaches into positivist sciences.

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Conference overview:

Keynote address

ANDREAS ROEPSTORFF (Aarhus): The Brain & Nature meets culture through agency.

The brain and outlines of the social

GRETA WAGNER (Frankfurt/New York): 'Life's not fair'. Conceptions of fairness and level playing fields in the cognitive enhancement debate.

SVENJA MATUSALL (Zürich): Sex in the brain. Essential differences or politics in the brain?

NICHOLAS STÄCKLIN (Lausanne): How to assemble a monogamous rodent. The sociality of the *Microtus ochrogaster* in zoology and the brain sciences.

Making the brain speak: devices and selves in neuroscience and psychiatry

JOHANNES BRUDER (Basel): In silicio veritas. Two ways of conceptualising the mind.

JONNA BRENNINKMEIJER (Groningen): Brains, devices and selves: Early meetings.

BRIAN CASEY (Bethesda): The promise of brain imaging for psychiatry.

Away from home: Critical perspectives on neuroscience knowledge in foreign fields

PANTEA BASHI / MELIKE SAHINOL (Aachen): 'Dual Use' in neuroscience? The use of neuro-technologies in the neuro-medical research and in non-medical practice field of neuromarketing.

GEORGIA-MARTHA GKOTSI (Lausanne): Neuroscience in court. The criminal responsibility of the mentally ill.

EMMA ZIMMERMAN (Montréal): Translating social neuroscience to applied ethics: an epistemological and critical examination of the field.

Policies of the brain

CHRISTINA PLAFKY (Edinburgh): From neuroscience to juvenile justice practice in Scotland.

LUTZ FRICKE (Belfast/Berlin): Neuro-policies and the malleable brain: a case study of the adolescent brain.

Closing discussion, input: BEATRIX RUBIN (Basel)

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