

Deleuze and Cognitive Science

Another “Next Step”

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Standard approaches

- Computationalism
- Connectionism

4EA cognition

- Embodied
- Embedded
- Extended
- Enactive
- Affective

Against myths of the subject

- Self-identical or centralized
- Representational
- Isolated or world-transcendent
- Spiritual or non-naturalist

How can Deleuze help CS take another “next step”?

- The virtual as mode of being of distributed / differential systems
- Political analysis of multiple subjectification practices: “populations of subjects”
- Political affect and social cognition

Deleuze and Dynamical Systems Theory

DELEUZEAN TERMS		MATERIAL SYSTEM	MODEL	MATHEMATICS
Ontological status	Function			
Virtual ("pre-individual")		Domain / capacities	State / phase space	Manifold
Intensive ("impersonal")	Field of individuation	Metastable field	Attractor layout	Distribution of singularities
	Individuation process	Processes	Trajectories	Functions
Actual		Conditions	States	Points
Haecceities / Assemblages		Situations	Degrees of freedom	Dimensions
Habits		Patterns of behavior	Attractors	Limits
Line of flight		Threshold	Bifurcator	Singularities
Body w/o Organs		Transformative conditions	"edge of chaos"	Fractals
Counter-actualization		Transformation of domain / capacities	Change of attractor layout	Change in distribution of singularities
Empty BwO (ATP)		Death	Chaotic region	Randomness

Neurodynamics

- “collapse of chaos” = formation of RCA
- = intensive individuation
- = resolution of differential field
- Part of distributed / organismic process of “sense-making”
 - Sensibility as openness
 - Signification as valuing
 - Direction as orientation of action

Deleuze and Neurodynamics

DELEUZEAN TERMS		MATERIAL SYSTEM	MODEL	NEURODYNAMICS	
Ontological status	Function			Short term	Long term
Virtual ("pre-individual")		Domain / capacities	State space	Differentials of neural function	Differentials of neural function
Intensive ("impersonal")	Field of individuation	Metastable field	Attractor layout	Chaotic firing	Neural plasticity
	Individuation process	Processes	Trajectories	Formation of an RCA	Forming a series of RCAs
Actual		Conditions	States	One RCA	Pattern of RCAs
Habits		Patterns of behavior	Attractors	Repetition of RCAs	Pattern of RCAs
Line of flight		Threshold	Bifurcator	Dissolution of any one RCA	Dissolving patterns
Body w/o Organs		Transformative conditions	"edge of chaos"	Instability	Neural plasticity
Counter-actualization		Transformation of domain / capacities	Change of attractor layout	Change of virtual repertoire of RCA patterns ("Eureka"!)	Change of virtual repertoire of RCA patterns
Haecceities / Assemblages		Situations	Degrees of freedom	Extended system	Extended system
Empty BwO (ATP)		Death	Chaotic region	Cessation of function	Cessation of function

Populations of subjects

- “The” (individual / abstract) subject
- Culture as enabling for “the” subject
- Developmental systems theory and epigenetic (extra-somatic) inheritance
- The “body politic”
- Gendered subjects

Multiple subjectification practices

- Virtual field of differential subjectification practices
- A phase space for the production of “bodies politic”
- Subjectification as impersonal individuation
- Feedback with the “biological”
- Concrete reality of bio-political subjectification: group selection

Political affect

- Affect is “de-personalizing”
- De-subjectification and political sovereignty
- The killing behavior of the forces of order

Deleuze, Spinoza, affect

- Affect as being affected (“affection”)
- Affect as feeling of change in power of the body as it is being affected
- A feeling of what the new assemblage would be like
- Damasio: “as if” loop / somatic marker

Affect, intensity, virtuality

- “Affect is the virtual as point of view”
(Massumi, *Parables for the Virtual*, p. 35)
- Feeling of potential for change in bodies entering a new assemblage
- Political affect: *pouvoir vs puissance*
- Deleuze’s ethical standard: does the encounter produce active joyous affect?

Conclusion

- Political physiology: resolution of dynamic differential fields at many levels and temporal scales
- Concrete situations / developed habits / multiple subjectification practices

Further research

- Deleuzean reading of Alva Noë's thesis on the virtual status of perceptual content
- Current neuroscience and the "From Chaos to the Brain" section of *What is Philosophy?*
- Relation of Varela's biological "sense-making" / "mind in life" thesis to notion of dynamic genesis in *Logic of Sense*
- Relation of philosophy to science in Deleuze: Queen, handmaiden, or something else?

- “L’Idée tout entière est prise dans le système mathématico-biologique de la différent/ciation. Mais mathématiques et biologie n’interviennent ici que comme des modèles techniques pour l’exploration des deux moitiés de la différence, la moitié dialectique et la moitié esthétique, l’exposition du virtuel et le procès de l’actualisation” (DR, 285).

- Is “science” merely heuristic / pedagogical for Deleuze’s pure philosophy of difference?
- But what about the minor vs major science distinction in ATP?
- And what status do Professor Challenger’s “disciplines” have?
- What status does bio-geo-hydro-political physiology have?

Palgrave Macmillan book series

- New Directions in Philosophy and Cognitive Science
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