

Philosophy & Science of Consciousness: Year 2, Spring /Summer Term 2009

Course Overview (Spring Term)

Official Course Code: C8809

Course Pattern: There will be lecture and seminar each weeks.

Course Code	Activity	Tutor	Day	Start	End	Room	Week Pattern
C8809	2y Philosophical Found of Cognitive Sci. 2	Clowes, R	Wed	10:00	11:00	Arundel 404	Seminar
C8809	2y Philosophical Found of Cognitive Sci. 2	Clowes, R	Wed	11:00	12:00	Arundel 404	Lecture

Course Organiser: This course is organised by Dr. Rob Clowes, a member of the Department of Informatics and the Centre for Research in Cognitive Science. You are welcome to direct queries concerning the course to Rob during his office hour in Pevensey2 5C8 (Thursday 15:00-16:00), or by e-mail (robertc@sussex.ac.uk).

ABOUT THE COURSE

This course analyses the nature of consciousness and whether an account of it can be integrated into the rest of our understanding of the world. In addition, we analyse the nature of self through a variety of prisms and especially its relationship to conscious mental life and its relationship to other minds.

The course continues the examination of various materialist conceptions of mind and extends analysis to recent work and ideas in Robotics, Artificial Life and Situated Reason. The complex issues surrounding the scientific explanation of consciousness and experience are discussed and the difficulties in giving a unified account of the objective and subjective aspects of mind. Approaches to the study of mind that emphasise embodiment, actional and physical context are also introduced. The course emphasises the application of philosophical methods in the study of consciousness.

Assessment

This is divided between a coursework component and an exam.

The exam will account for 70 percent of your overall mark.

The remaining 30 percent will be accounted for by several coursework assessments.

Coursework (to be confirmed):

One essay (worth 20%) and one seminar presentation (worth 10%) of total course mark.

Course Essay:

Students should submit one essay of around 2000 words in the spring term week 9. (Please keep to the word limit.)

Citations and bibliographical details should follow the standard form. Essays to be typed, with wide margin please.

Course Presentation

One presentation of no more than 15 minutes duration (including questions) by the summer term week 6. You should be ready to review an approved reading dealing with issues raised by this course and lead a critical discussion of the ideas it presents.

Additional Reading List

In your essay, credit will be given for the appropriate use of references. You should research your topic, and show that you have done so. In the essay you should follow standard academic referencing style. In the exam you should aim to know who the relevant authors are, and ideally also the book and paper names in key cases..

READING.

Some Key Texts

- Metzinger, T. (2004). *Being No One: The Self-Model Theory of Subjectivity*: Bradford Book.
- Dennett, D. C. (1991). *Consciousness Explained*: Penguin Books.
- Chalmers, D. (1996). *The Conscious Mind: In Search of a Fundamental Theory*. Oxford.

And Two background coursebooks

- Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. London: Routledge.
- Blackmore, S., (2003). *Consciousness: An Introduction*, Hodder & Stoughton.

Although much of the reading for this course is available as papers on the internet it will be very helpful if you had access to the above texts. The Blackmore text in particular is introductory but of great use for topics covered in the Spring Term and to a lesser extent in the Summer Term. References to individual weeks reading are included below.

Useful background reading, especially for those not so familiar with the philosophy of mind and cognitive science, can be had respectively in:

- Churchland, P. M. (1983). *Matter and Consciousness*. Cambridge, Massachusetts: MIT Press.
- Andy Clark, *Mindware*. Oxford UP

A further useful background text on the history of philosophy and psychology especially as they relate to consciousness studies is:

- Flanagan, O. (1991). *The Science of Mind* (2nd ed.). Bradford, MA: MIT Press.

Topics for lectures and seminars, with additional reading.

The first four weeks of the course concern the nature of consciousness. We deal with metaphysical problems, broadly, how consciousness meshes (or doesn't) with the rest of the world. We also deal epistemic problems to do with how we know about our own minds. What kinds of knowledge we can have about our minds and what we can know about the world. We also look at the structure and particular problems which might face a putative science of consciousness.

Week 1 Lecture – Ways into Consciousness: Paying Attention to Experience (Lecture 14th January, Seminar 21st Jan)

In the first two weeks we will look at what account can be given of experience and what explanatory resources can be brought to trying to understand it. We read a classic paper by William James and ask how far the picture of consciousness presented there is coherent.

Does James picture of Consciousness pick out a natural kind? Does he leave out essential features of consciousness? Can we imagine or even observe conscious beings who do not meet all of his criteria?

Central Readings

James, W. (1890). *The Principles of Psychology*. chapter 9: The Stream of Thought online at <http://psychclassics.yorku.ca/James/Principles/> *

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 1 – Introduction)

Week 2 - Consciousness & its place in nature (Lecture 21st Jan, Seminar 28th January)

We then turn to the question of how and whether our understanding of consciousness can be made to mesh with our understandings of the rest of nature. How does consciousness fit into the world?

Questions to consider:

What metaphysical possibilities exist for understanding the relationship between consciousness and the rest of nature? Which are the most likely candidates and which criteria can we use for judging between them? What is the role of thought experiments in understanding these metaphysical questions? Can we trust them?

Central Readings

The seminar will focus on

Chalmers, D. (2002). Consciousness and its place in nature. *Blackwell Guide to the Philosophy of Mind*. S. Stich and T. Warfield.

Also see:

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.[Chapters 1 (What is the problem?), 2 (What is it like to be ...?) & to a lesser extent 3 (What does Consciousness do?) are all useful background to these papers]

Chalmers, D. (1995). "Facing up to the Problem of Consciousness." *Journal of Consciousness Studies* 2(3). *

Further Background Reading

- Nagel, T., 'What is it like to be a bat?' in D Dennett and D Hofstadter, eds, *The Mind's I*, Penguin; also in T. Nagel, *Mortal Questions.*, and in W Lyons (ed) *Modern Philosophy of Mind*, Dent, 1995.
- Nagel, T., 'Conceiving the Impossible and the Mind-Body Problem' – available as a downloadable PDF file on Nagel's website <http://www.nyu.edu/gsas/dept/philo/faculty/nagel/papers/conceiving.pdf>
- McGinn, C, 'Can we solve the Mind-Body Problem?' in W Lyons (ed) *Modern Philosophy of Mind*, Dent, 1995, also in N.Block, O Flanagan and G Guzeldere (eds) *The Nature of Consciousness: Philosophical Debates*. MIT Press, 1997, selection 33.
- van Gulick, R. 'Understanding the Phenomenal Mind: Are we all just Armadillos?' in M. Davies and G. Humphreys (eds) *Consciousness: Philosophical and Psychological Aspects*, Blackwell, 1993
- Searle, J. R. (2002). "Why I am Not a Property Dualist." *Journal of Consciousness Studies* 9(12): 57-64.
- D. Chalmers, 'The Puzzle of Conscious Experience' *Scientific American*, December 1995 pp. 62-68.

<http://www.u.arizona.edu/~chalmers/papers/puzzle.html>

- Frank Jackson, 'Epiphenomenal Qualia', *Philosophical Quarterly*, 32 (1982), pp. 127-36. Online at

<http://members.aol.com/NeoNoetics/Mary.html>

- J. Searle, 'Why I am not a Property Dualist'. Article just published in *Journal of Consciousness Studies*, Vol 9 No 12 (2002). Full text at:

<http://www.imprint.co.uk/pdf/searle-final.pdf>

Weeks 3 & 4 - How should we study experience? (Lecture 28th January, Seminar 4th Feb)

In weeks we look at some of the presuppositions of a science of consciousness and what are the implications of considering consciousness studies as a "first-person science". We contrast some of the approaches of classical phenomenology with Dennett's heterophenomenology and ask:

Can there be a first person science of consciousness? A third person science? What is heterophenomenology, and can it provide a complete methodology for studying consciousness? Is it anything other than business as usual? Does it make sense to contrast the 'way consciousness is', and how it seems?

Central Readings

Dennett, D, 'The Fantasy of First-Person Science' (a dialogue with David Chalmers)
Online at <http://ase.tufts.edu/cogstud/papers/chalmersdeb3dft.htm> *

Or

Dennett, D. C. (1991). *Consciousness Explained*: Penguin Books. Chapter 4 – A Method for Phenomenology

Dennett, D, 'The Zombic Hunch' (Royal Inst of Philosophy Millennial Lecture, 2000.)
Online at <http://ase.tufts.edu/cogstud/papers/zombic.htm>

Background

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 2 – Methodologies, and also of some interest Chapter 3)

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.
(Chapters ?)

Multiple drafts and the Cartesian Theatre

We look at Dennett's attack on Cartesian Materialism and the alternative conception Dennett offers: the multiple drafts model. We also review his attempt to put the methodology of studying consciousness on a firmer ground with *heterophenomenology*.

What is wrong with the 'Cartesian Theatre' and why is it so seductive? What are the implications of Dennett's multiple drafts model for knowing our own minds?

Central Readings

Dennett, D. C. (1991). *Consciousness Explained*: Penguin Books. Chapter 5 – Multiple Drafts versus the Cartesian Theatre
+ Chapter 6 – Time and Experience

And

Daniel Dennett and Marcel Kinsbourne, 'Time and the Observer: the Where and When of Consciousness in the Brain'. *Behavioral and Brain Sciences*, 15, 183-247, 1992.

Online at <http://ase.tufts.edu/cogstud/papers/time&obs.htm> *

(NB. – some of the material in Chapter 5 of *Consciousness Explained* is not in the Dennett and Kinsbourne, so if it can get the former it's probably preferable).

Or

For background see:

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.[Chapters 4 (Attention and timing), 5 (The theatre of the mind)]

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 3)

And for some arguments against Dennett see

Searle, J. *The Mystery of Consciousness*, Granta, 1997. Chapter Five, 'Consciousness Denied: Daniel Dennett's Account'; and 'Appendix: An Exchange with Daniel Dennett.' *

Further Reading

Baars, B. (1988). *A cognitive theory of consciousness*. Cambridge: Cambridge University Press, Cambridge.

Baars, B. (1996). *In the Theater of Consciousness: The Workspace of the Mind*. New York: Oxford Univ Press.

Contextualising books & papers for the first four weeks of the course

In addition to the other core texts, the following texts are particularly recommended.

- Dennett, D. *Consciousness Explained*, Penguin, 1991. Especially Parts I and II.
- Dennett, D. *Brainchildren: Essays on Designing Minds*. Penguin, 1998. (See esp.: Ch 7, 'Real Consciousness'; Ch 8 'Instead of Qualia'; Ch 10 'The Unimagined Preposterousness of Zombies: Commentary on Moody, Flanagan and Polger'.)
- Dennett, D. 'Quining Qualia' in A. Marcel and E. Bisiach, eds, *Consciousness in Modern Science*, Oxford University Press 1988. Reprinted in W. Lycan, ed., *Mind and Cognition: A Reader*, MIT Press, 1990, A. Goldman, ed. *Readings in Philosophy and Cognitive Science*, MIT Press, 1993. Online at <http://ase.tufts.edu/cogstud/papers/quinqual.htm>
- Rey, G. 'Towards a Projectivist Account of Conscious Experience' in T Metzinger, ed. *Conscious Experience*. Imprint Academic, 1995.
- Rosenthal, D.M. 'Multiple Drafts and Facts of the Matter' in T Metzinger, ed. *Conscious Experience*. Imprint Academic, 1995.
- Donald, M. (2001). *A Mind So Rare: The Evolution of Human Consciousness*. New York / London, W. W. Norton & Company.
- David Lodge, *Thinks...* Penguin 2002. Chapter 3.

Thinks ... is an interesting novel, based in a Cognitive Science department in a fictional English University (no similarity to Sussex intended!) Chapter 3 contains a

humorous and informative ride through the key issues in understanding the conscious mind.

- John Searle, *The Mystery of Consciousness*, Granta 1997 (£7.99) - This book consists of a set of critical book reviews by John Searle of a number of key authors in the area of consciousness. These authors include: Francis Crick, Gerald Edelman, Roger Penrose, Daniel Dennett and David Chalmers. The book contains comments by Dan Dennett and Dave Chalmers on Searle's reviews of their books, plus responses by Searle. There are also two excellent chapters (the initial and the concluding one) by Searle putting forward his own views on consciousness.

Week 5. The Perceptual World and the Grand Illusion (Lecture 4th Feb, Seminar 11th Feb)

This week we focus on how mind perceptually grasps the world beyond itself. We look at the representational approach to visual perception often presupposed by cognitive science and why this approach is held to have problems.

Some theorists claim that the way the folk naively take themselves to experience the world is in some sense a misapprehension, even a *grand illusion*. We will evaluate this claim.

Questions for consideration in seminars:

What are the particular problems faced by the representational account of vision? What is the positive alternative to this account? In what sense might the naïve stance lead us to conclude that the visual world as experienced is illusory? What implications does this have for the ways we understand our experiences of the world?

Alva Noe, 'Is the Visual World a Grand Illusion?' *Journal of Consciousness Studies* (Vol.9, No.5-6) Available online at: <http://www.imprint.co.uk/pdf/NOE.PDF>

Clark, A. (2002). "Is seeing all it seems? Action, Reason and the Grand Illusion." *Journal of Consciousness Studies* 5-6: 181-202. <http://www.philosophy.ed.ac.uk/staff/clark/pubs/jcsrev.pdf> (pre-print also available online)

Blackmore, S. (2002). There Is No Stream of Consciousness. *JOURNAL OF CONSCIOUSNESS STUDIES*, 9(5/6), 17-28. (available through Sussex journals)

Background

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.[Chapter 6 (The Grand Illusion).

Further reading

For an extended critique of 'pure vision' see P.S.Churchland, V.S.Ramachandran and T.Sejnowski "A Critique of Pure Vision" in C. Koch and J.Davis (eds) *LARGE-SCALE NEURONAL THEORIES OF THE BRAIN* 23-60 *

More reading available on request.

Week 6 – The Skill Theory of Perceptual Consciousness

We discuss one alternative account of perception, the *enactive theory of perception*, and consider its strengths and weaknesses when compared to the classic representational account. How radically does the enactive approach imply we need to reformulate our theories of perception and our understanding of experience?

In what sense might the world be said to function as an external memory? What is the problem of perceptual presence supposed to be? How significant is this problem?

O'Regan, J. K. and A. Noë (2000). "Experience is not something we feel but something we do: a principled way of explaining sensory phenomenology, with Change Blindness and other empirical consequences." Available at <http://nivea.psycho.univ-paris5.fr/ASSChtml/ASSC.html>

Also see the online *psyche* symposium here on Alva Noë's "Action in Perception". A précis of Noë's book is available at <http://psyche.cs.monash.edu.au/> along with some interesting commentaries. Especially check out Jesse Prinz & William Lycan's commentaries.

Background

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 5 - Perception)

Further Reading

For the paper that started it all see:

J. Kevin O'Regan and Alva Noë "A sensorimotor account of vision and visual consciousness BEHAVIORAL AND BRAIN SCIENCES 24:5:2001 (Preprint available at: <http://www.bbsonline.org/Preprints/ORegan/>) *

Clark, A. (2001). Mindware: An Introduction to the Philosophy of Cognitive Science. Oxford, Oxford University Press. (Chapter 5) *

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 5 – Perception & Chapter 7 – The Embodied Mind)

You may also like to take a look at this recent video:

http://www.edge.org/3rd_culture/noe08/noe08_index.html

For some criticisms see

Clark, A. (2006). Vision as Dance? Three Challenges for Sensorimotor Contingency Theory. *Psyche*, 12(1).

Block, N. (2005). Review of Alva Noë, Action in Perception. *The Journal of Philosophy*, 259-272.

Prinz, J. (2006). "Putting the Brakes on Enactive Perception." *PSYCHE* 12(1): 1-19.

Much more reading available on request.

Weeks 7 & 8 – Minimal and Narrative Selves

In weeks 7 & 8 we begin to look at some different conceptions of the self and some of the different ways the concept can be interpreted and analysed. We discuss some classic views of the self, especially the 'ego' and 'bundle' theories. We compare these classical notions with minimal and more elaborated (narrative) notions of self as we find them in cognitive science and we ask to what extent they complement and to what extent they clash with each other. We further ask how they accord with, reconstitute or illuminate folk conceptions of the self.

In addition, we ask:

What are the links between, self and agency, self and narrative, self and simulation? In what ways might the folk conception of self be illusory? Could a robot have a self? What can we learn about self from disorders such as dissociative identity disorder, phantom limbs, alien limbs and schizophrenia? What might a 'realist' conception of the self be?

We will break this into two sections

Week 7 - The Self as Centre of Narrative Gravity

The core reading for this is

Dennett, D. C. (1992). *The Self as a centre of Narrative Gravity*. In F. Kessel, P. Cole & D. Johnson (Eds.), *Self and Consciousness: Multiple Perspectives*. Hillsdale, NJ: Erlbaum. (also online through cogprints @ <http://cogprints.org/266/0/selfctr.htm>)

Week 8 puts this in the context of Minimal Conceptions of Self

Gallagher, S. (2000). Philosophical conceptions of the self: Implications for cognitive science. *Trends in Cognitive Sciences*, 4(1), 14-21.

Dennett, D. C. (1992). "The Self as a centre of Narrative Gravity."

A. Clark "I am John's Brain" appendix to *Being There*, also available at: <http://www.zynet.co.uk/imprint/online/Clark.html> *

Damasio, A. R. (2000). *The Feeling of What Happens: body, emotion and the making of consciousness*: Vintage. (Especially chapter 5)

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 3, Chapter 10)

Further Reading

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.[Chapter 7 (Egos, bundles and multiple selves) & Chapter 8].

Humphrey, N., & Dennett, D. C. (1989). *Speaking for our selves: an assessment of multiple personality disorder*.

Dennett, D. C. (1991). *Consciousness Explained*: Penguin Books. Chapter 13 The Reality of Selves. (cogprints @ <http://cogprints.org/810/0/s4os.htm>)

J.Panksepp "The periconscious substrates of consciousness" " in S.Gallagher and J Shear (eds) *THE SELF* . Also in *JCS*, Volume 5, No 5/6 (Double Issue) 1998

G. Strawson "The Self" in S.Gallagher and J Shear (eds) *THE SELF*. Also in: *JCS*, Volume 4, No 5/6 (Double Issue) 1997 and available online at: <http://www.imprint.co.uk/jcs/> *

Weeks 9 & 10 - The 'Self Model Theory of Subjectivity' and a multi-dimensional approach to consciousness

This week we pick up the threads of the role of self in consciousness and more generally the representational approach to mind. We concentrate in particular Metzinger's 'self-model theory of subjectivity'. We attempt to link it to the epistemic problems of consciousness discussed earlier in the course. We ask:

Is the self is central to conscious life? Can one be conscious without a self? How does intentionality relate to consciousness? How satisfactory is the representational approach to consciousness? In what sense is our mind's representational content cognitively transparent? What does 'epistemic closure' suggest about epistemic problems of consciousness?

We also concentrate on some of the details of Metzinger's theory and ask:

1. What are the central defining features of subjective experience according to Metzinger? Do you think they adequately capture what we have discussed as phenomenal experience in this course?
2. What is a 'phenomenal self model'? Does it help clarify the nature of the self as we have previously discussed it? What might be said for and against it?
3. What does Metzinger mean by transparency? Do you think it is right to consider it the central one of his constraints? How does it relate to the others?
4. What is the role of representationalism in Metzinger's approach? Are there reasons to challenge this assumption?
5. What is the significance of what he calls the Phenomenal Model of the Intentionality Relation (PMIR)? How does the PMIR relate to the traditional notion of intentionality? What implications does this conceptualisation have for the nature of the self? Of self consciousness?
6. Does it make sense to separate minimal consciousness from subjectivity in the way that we could interpret Metzinger as doing? What reasons can you think of for and against such a division?
7. How useful is Metzinger's methodology, i.e. the multi-level constraint satisfaction approach?

8. On what grounds might we hold that selves are illusory? If selves are not what we naively take them to be, then what are they? What possible ways are there of viewing the relations between self, mind & body? If there are no selves, who and what are we?

Central Reading

Metzinger, T. (2005). Précis: Being No One. *PSYCHE*, 11(5), 5.

&

Metzinger, T. (2004). The Subjectivity of Subjective Experience: A Representationalist Analysis of the First-Person Perspective. *Networks*, 3(4), 33-64. (both available online)

This video available through YouTube should also come in useful:

<http://www.youtube.com/watch?v=AfdVyYSTuIs>

Also have a look at some of the online replies to the Précis. Of particular interest is:

Dan Zahavi – Being Someone

For more background see

Blackmore, S. (2003). *Consciousness: An Introduction*: Hodder & Stoughton.[review Chapter 8 (Theories of self) and you might also like to look at Chapters 17 (The unity of consciousness) & 25 (the view from within) to help tie things together]

It is also interesting to contrast Metzinger's position with the following accounts:

Damasio, A. R. (2000). *The Feeling of What Happens: body, emotion and the making of consciousness*: Vintage. (especially chapters 5 and 6 are useful on the relationship between self and consciousness)

Revonsuo, A. (2006). *Inner Presence: Consciousness as a Biological Phenomenon*: MIT Press.

D. Cosmelli and E. Thompson 'Embodiment and Envatment': Reflections on the Bodily Basis of Consciousness . In J. Stewart et al (eds); *Enaction: A New Paradigm for Cognitive Science*. (MIT Press, forthcoming)

<http://individual.utoronto.ca/evant/EnactionChapter.pdf>

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 3 - Self and Person, Chapter 10 – Self and Person)

Weeks 1 & 2 Summer Term: Agency, Alienation and the Will

What do dissociations of agency tell us about the nature of the Will? Could our sense of the Will be in some sense illusory? What are the advantages and problems of the representational level of analysis? Is the experience of agency really 'thin'? What do dissociations of agency tell us about the mind more generally?

Wegner, D. (2005). Precis of the illusion of conscious will. *Behavioral and Brain Sciences*, 27(05), 649-659.

Gallagher, S., & Zahavi, D. (2008). *The Phenomenological Mind*. (Chapter 8 – Action and Agency)

Metzinger, T. (2005) Conscious volition and mental representation: Towards a more fine-grained analysis. In: *Disorders of Volition*, ed. eds. N. Sebanz & W. Prinz, Bradford Book, MIT Press.

Further Reading on Agency

Wegner, D. W. (2002) *The Illusion of Conscious Will*, MIT Press. (This book is a fun read and better than the Precis, but clearly will take a little more time)

Pacherie, E. (2007). "The Sense of Control and the Sense of Agency." *PSYCHE* 13(1).

Gallagher, S. (2004) Neurocognitive Models of Schizophrenia: A Neurophenomenological Critique. *Psychopathology* 37(1): 8-19.

For further background on schizophrenia and agency

Frith, C. D. (2005). The self in action: Lessons from delusions of control. *Consciousness and Cognition*, 14, 4: 752-770.

Frith, C. D., Blakemore, S.-J., & Wolpert, D. M. (2000). Abnormalities in the awareness and control of action. *Philosophical Transactions of the Royal Society of London B*, 355: 1771-1788.

Stephens, G. L. & Graham, G. (2000) *When Self-Consciousness Breaks*, MIT Press. *

Haggard, P. (2005). Conscious intention and motor cognition. *Trends in Cognitive Science*, 9, 6: 290-295.

For arguments against hyper-representationalism see

Gallagher, S. (2005) Metzinger's Matrix: Living the Virtual Life with a Real Body. *PSYCHE* 11(5): 5.

Metzinger, T. (2006) Reply to Gallagher: Different conceptions of embodiment. *PSYCHE* 12(4): 4.

Metzinger, T. (2004) *Being No One: The Self-Model Theory of Subjectivity*, Bradford Book.

Even Further Reading

Akins, K. A. and Dennett, D. 1986. Who may I say is calling? *Behavioral and Brain Sciences* 9: 517-18. **

Bratman, M. E. (1987). *Intention, Plans, and Practical Reason*. Cambridge, MA: Cambridge University Press.

Frith, C. D. (1992). *The Cognitive Neuropsychology of Schizophrenia*. New Jersey, Lawrence Erlbaum Associates.

Gallagher, S. (2004) Neurocognitive Models of Schizophrenia: A Neurophenomenological Critique. *Psychopathology* 37(1): 8-19.

Jordan, M. I. & Wolpert, D. M. (1999). Computational motor control. In M. Gazzaniga, (Ed.), *The Cognitive Neurosciences*. Cambridge, MA: MIT Press.

Libet, B. (1985). Unconscious cerebral initiative and the role of conscious will in voluntary action. *Behavioral and Brain Sciences*, 8: 529-566.

Marcel, A. (2003). The sense of agency: Awareness and ownership of action. In J. Roessler & N. Eilan (Eds.) *Agency and self-awareness*. Oxford: Oxford University Press, pp. 48-93.

Wakefield, J. & Dreyfus, H. (1991). Intentionality and the phenomenology of action. In E. Lepore & R. Van Gulick (Eds.), *John Searle and his critics*. Cambridge, MA:

Blackwell, pp. 259-270.