UNIVERSITY OF SUSSEX
SCHOOL OF PSYCHOLOGY

Social Neuroscience
Masters: Code 994C8
15 Credits
Autumn Term 2017

Module Convenor: Prof. Jamie Ward

NOTE: Most of the questions you need answers to about this module are in this document. Please read it fully and carefully before your first seminar.

NOTE: This document concerns the structure and content of the module. If you have questions about procedures, please consult the School of Psychology Administration Office in Pev1 2A13 or via psychology@sussex.ac.uk

MODULE INFORMATION & REQUIREMENTS

Module Structure, Aims and Objectives

Social Neuroscience is concerned with how people recognise, understand and interact with each other in social settings. It aims to understand these processes in terms of fundamental cognitive and neural mechanisms that reside in the brain that have been shaped by both individual experience and evolutionary history. Topics covered include: the evolution of social intelligence and culture; neuroscience of emotion; recognising faces and bodies; empathy and simulation theories; 'mentalising' and autism; cooperation and altruism; self and identity; prejudice; anti-social behavior; neuroscience of morality; and the development of social behaviour. Although many of these concepts have been explored in detail by social psychology, the methods of cognitive neuroscience brings a fresh insight into these issues.

Module Learning Outcomes.

By the end of the module, a successful student should be able to:	
1	discuss how evolutionary pressures contributed to human social development and culture
2	describe how the methods of cognitive neuroscience can be adapted to study social processes, and their limitations in doing so
3	critically evaluate the main theories in the field

Pre-Requisites

None

Module Contact Information

Convenor: **Prof. Jamie Ward**
Location: room 2B1, Pevensey 1
Telephone: 01273 876598
E-mail: jamiew@sussex.ac.uk

Teaching and Learning

The syllabus details for the module are available via links on the Psychology teaching web pages and via Sussex Direct.

- **Lectures**

There will be 10 lectures, each 2 hours long (with a short break in the middle). There will also be a chance to discuss key articles from the literature and for students to present material for discussion.

To avoid disruption to the majority, please try to arrive at least 5 minutes before the start time of the lecture (see lecture attendance etiquette in course handbook).

It is **CRUCIAL** for you to understand that formal examination on this module will be based on material covered in the lectures, seminars **and** your "essential reading" for each week. It is also important for you to understand that lectures will **NOT** attempt to 'cover' all such material (and nor will seminars). That is, lectures and seminars are not intended to provide an alternative to you learning the material in your essential reading. Any attempt to rely solely on learning material presented in lectures and seminars will severely restrict your ability to do well during formal assessment of this module. Lectures (and seminars) are intended to fulfil functions other than repeating or précising material covered in the essential readings.

Lectures on this module are intended to perform several functions. First, they will provide another 'channel' of communication, allowing you to hear as well as read about (selected) material relevant to the module.

A second function of the lectures is to allow you to review material you have learned so far. If you have already done the essential reading associated with the lecture, ask yourself how well the lecturer has covered that material.

A third function of the lectures is to illustrate the nature of a critical approach to students. The lecturer will sometimes simply explain material. At other times, however, the lecturer will criticise the material in some way. University education is about learning how to constructively criticise as well as simply absorb information. Evaluate your lecturer's criticisms. Are they simply personal prejudices (e.g., "I don't like this") and, if so, are they presented as such? Or are reasons given for criticisms made (e.g., "I don't like this because…)?

You should note that all the study skills advice in existence suggests that straightforward 'absorption' of material (i.e., reading, listening, rote-learning and memorising) should take up about 20% of learning time. The other 80% should come from 'interrogating' that information (e.g., looking for links, attempting to summarise and synthesise, looking for strengths and weaknesses and possible improvements, applying to different areas, etc.).

- **Independent study** The difference between studying at university and study you may have done previously is that at university the emphasis is on you finding out things for yourself. Just as fitness clubs attempt to foster and facilitate (but cannot impose) fitness, universities attempt to foster and facilitate (but cannot impose) academic excellence. Results will (and can

only) come as a direct result of *you* making appropriate use of the facilities at your disposal. Lectures, seminars and the like are there to support and guide your independent learning – they are not there to "pass information from tutors' heads to students' notebooks without passing through the brains of either." Not everything you will need or want to know will be covered in the lectures, seminars or essential readings. You need to become familiar with the material you are guided towards, but you also need to learn to 'manipulate' that material: apply it to new domains, compare and contrast across topics, synthesise it, evaluate it, consider its relevance to issues of interest to you, supplement it, etc. This can only be done by being interested and working hard because you want to. As we shall learn below, an exclusive focus on passing exams will *undermine* that motivation and will make you perform less well as a result. Thus, study because you want to learn and stop when you have answers to your own satisfaction for the questions you care about. Finally, note that independent study is study you engage in outside of formal contact hours with faculty – it does not have to be solitary (see under 'seminars' above).

- **Office Hours** Your module convenor will hold at least one office hour each week. Please see the Psychology School website for when and where this will be held. Students may use these office hours (without appointment) to discuss or ask about *anything* module-related.

- **Study Direct** You are encouraged to access module materials and use the module forum in Study Direct. This is the best way to share ideas amongst your fellow students and ask questions about the module. Module convenors and tutors would prefer to receive queries via the Study Direct module forum than by email.

Books and Reading

- The module is closely modelled on the following text and it is strongly recommended that you buy a copy as soon as possible. (NOTE: The book is due for release in October 2011. The module convenor will supply a pdf of chapters relating to the first few lectures)

Ward, J. (2017). *The Student's Guide to Social Neuroscience (Second Edition)*. Hove: Psychology Press.

You will need to go beyond this text in preparing for seminars and essays. Use it as a starting point to orient yourself to particular fields of interest, and then pursue other material that appears to you to be relevant. There are also extensive web-based materials associated with this text. Details on how to access these will be given at the induction meeting.

Assessment

Formal assessment for *Social Neuroscience* comprises an essay of 3000 words (80%) and a 1000 word report (20%) consisting of an annotated bibliography.

Submission deadlines are shown on your assessment timetable on Sussex Direct.

In line with University regulations, every effort will be made to ensure that one marked copy of coursework is returned with feedback within 15 term time working days of the relevant

submission deadline. Feedback will be returned to you on the hardcopy. Your grade will be both on the hardcopy and visible online via your Sussex Direct page.

A single copy of the poster can be submitted and it can be handed in directly to the module convenor either in class or via his pigeon hole (located in Psychology School Office, Pevensey 1 2A13).

Information on the following can be found at the link below:

- Submitting your work
- Missing a deadline
- Plagiarism and Collusion - Academic Misconduct
- Late penalties
- Exceptional circumstances
- Exams
- Help with managing your studies and competing your work
- Assessment Criteria

http://www.sussex.ac.uk/psychology/internal/students/examinationsandassessment

Student Evaluation

All modules at Sussex are fully audited. You will be asked to complete an anonymous student evaluation form near the end of each term, allowing you to comment on and criticise all aspects of the module. You may also comment on the module at any time, either to convenors or tutors, and you may do this directly or via some intermediary (e.g. a student representative). Feedback received in this way will be collated and shown to all tutors and module convenors for the module. It will also be reported to the psychology teaching and learning committee. Module Evaluation summaries from the previous year are available on the School web pages. Reactions and responses to such student feedback will be reported back to students via student representatives (who attend School meetings). In addition, module convenors meet regularly with seminar tutors to discuss how the module is progressing and whether and when improvements might be made. We want the module be as good as it possibly can be so all and any feedback is gratefully received.

Lecture Overview

Week 1 (28th September 2017)

Conceptual and Methodological Foundations of Social Neuroscience

The lecture consists of two different parts.

The first part deals with a core conceptual issue. Can the study of the brain really reveal anything about social behaviour? Do brain-based levels of explanation necessarily exclude the role of culture and individual experiences in favour of hard-wired or 'biological' accounts? Is social neuroscience reductionist; i.e. is it trying to replace psychological concepts (such as attitudes) with biological ones? I will argue that studying the brain can generate a new understanding of social phenomena, but without sweeping away other approaches.

The second part of the class presents an overview of the methods of cognitive neuroscience including fMRI, TMS, EEG and psychophysiology. This is primarily aimed at students who are newer to the field. However, students who already have a good understanding of these methods will learn about the challenges of adapting them in to the social realm (e.g. methodological pitfalls of linking questionnaire data with brain imaging data; so-called 'voodoo correlations').

Key Chapter (students recommended to read before the class)
Chapters 1 and 2. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

- Way, B., & Lieberman, M. D. (2010). Is there a genetic contribution to cultural differences? Collectivism, individualism, and genetic markers of social sensitivity. *Social Cognitive and Affective Neuroscience, 5*, 203-211
- Mitchell, J.P. (2009). Social psychology as a natural kind. *Trends in Cognitive Sciences, 13*, 246-251.
- Willingham, D.T., & Dunn, E.W. (2003). What neuroimaging and brain localization can do, cannot do, and should not do for social psychology. *Journal of Personality and Social Psychology, 85*, 662-671.
- Hauser, M.D. (2009). The possibility of impossible cultures. *Nature, 460*, 190-196.
- Vul, E., Harris, C., Winkielman, P. & Pashler, H. (2009). Puzzlingly High Correlations in fMRI Studies of Emotion, Personality, and Social Cognition. Perspectives on Psychological Science, 4, 274-290 PLUS LINKED COMMENTARIES. You may also be able to pick up the debate in the non-academic press.

Week 2 (5th October 2017)

Evolutionary Origins of Social Intelligence and Culture

Modern humans, Homo Sapiens, emerged as a distinct species only 200,000 years ago. Over time, this new species developed a variety of tools, produced elaborate art, and began to bury their dead in ornate rituals. In the last few hundred years, they invented computers, visited the moon, and discovered the basic physical laws that govern the universe. We are separated from our nearest living ancestor, the chimpanzee, by only 1.6% of DNA and we shared a common ancestor with the chimpanzee around 6 or 7 million years ago. What is it in that 1.6% of DNA that has enabled humans to achieve this level of technological and cultural complexity? According to one idea, the main evolutionary pressure for human intellectual development is not the ability to be smarter per se but rather the ability to understand and predict complex social interactions and to outwit our peers – so-called social intelligence. According to this view, evolutionary pressures to be socially smarter would lead to more general changes (e.g. larger brain size) that would lead to increased intellect in other, non-social, domains. The complex culture that we have today, and that sets us apart from all other species, would then be viewed as a by-product of these earlier, more general adaptations.

Key Chapter (students recommended to read before the class)
Chapter 3. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Herrmann, E., Call, J., Hernandez-Lloreda, M. V., Hare, B., & Tomasello, M. (2007). Humans have evolved specialized skills of social cognition: The cultural intelligence hypothesis. *Science, 317*(5843), 1360-1366.

Iriki, A., & Sakura, O. (2008). The neuroscience of primate intellectual evolution: Natural selection and passive and intentional niche construction. *Philosophical Transactions of the Royal Society B, 363*, 2229-2241.

Reader, S. M., & Laland, K. N. (2002). Social intelligence, innovation, and enhanced brain size in primates. *Proceedings of the National Academy of Science, USA, 99*, 4436-4441

Rizzolatti, G., Fogassi, L., & Gallese, V. (2006). Mirrors in the mind. *Scientific American, Nov*, 30-37.

Whiten, A., & van Schaik, C. P. (2007). The evolution of animal 'cultures' and social intelligence. *Philosophical Transactions of the Royal Society B, 362*, 603-620.

Week 3 (12th October 2017)

Emotions and Motivation

Why are some stimuli associated with emotions and others are not? The standard answer to this question is that some stimuli are more important than others (e.g. because they enhance or threaten survival chances). Emotions are one way of tagging these stimuli to ensure that they receive priority treatment, and ensuring that they are responded to appropriately. Broadly speaking, they can be tagged in one of two ways: either as something that is to be sought (i.e. a rewarding stimulus) or avoided (i.e. a punishing stimulus). As such, many theories closely tie emotions with the concept of motivation (we are motivated to seek rewards and avoid punishment). Importantly, emotions are not just tied to stimuli but also to predicted stimuli. Thus, the omission of an expected reward can lead to emotions (e.g. anger) as can omissions of expected punishment (e.g. relief). Many social stimuli and situations are rewarding (e.g. imitation, cooperation) or punishing (e.g. social exclusion). As such both social stimuli and non-social stimuli are likely to have been selected as having survival value in our evolutionary past. Although, we may be born with a core set of basic likes and dislikes (e.g. we like sweet things and dislike pain) it is possible to arbitrarily learn new emotional associations by pairing neutral stimuli with emotive responses. We may come to be afraid of flying in aeroplanes, or we may come to like certain painful stimuli (e.g. eating chillis, fetishes). As such, emotional learning is a highly flexible system that is not limited to stimuli in our evolutionary past and extends beyond stimuli with obvious survival value.

Key Chapter (students recommended to read before the class)
Chapter 4. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:
Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion, 6*, 169-200.
Le Doux, J. E. (1996). *The Emotional Brain*. New York: Simon and Schuster.
Phelps, E. A. (2006). Emotion and cognition: Insights from studies of the human amygdala. *Annual Review of Psychology, 57*, 27-53.
Rolls, E. T. (2005). *Emotion Explained*. Oxford: Oxford University Press.

Week 4 (19th October 2017)

Reading Faces and Bodies

Our social interactions exist between other members of our species, so-called conspecifics. As such we need an effective system of keeping track of who is who. We need to remember what people look like and what their typical behaviours are. Facial and bodily appearances provide only superficial clues as to a person's inner state. But given that we cannot directly observe inner states but we can observe faces and bodies there is a strong incentive to extract whatever information we can from a face or body. We need to know whether someone is likely to cooperate or cheat. Skilled basketball players, for instance, learn to detect fake passes from body language alone. We need to know whether someone is happy or sad, or angry and likely to use force. Faces and bodies (together with voice cues) provide an important source of such information. Recognising someone's expression involves making inferences about someone's current state; they are smiling therefore they are happy. However, there is a natural tendency to go beyond this. Many people believe that we can read character traits, such as trustworthiness and aggression, from faces even when they have neutral facial expressions. Indeed, people tend to vote for political candidates whose faces are judged to be associated with greater competency. This lecture starts by considering the basic mechanisms of recognising a face from both a cognitive and neural perspective. Particular consideration is given to the issue of whether or not recognising an emotional expression involves different mechanisms from recognising familiar faces, or reading other dynamic cues in a face (such as gaze direction). Recent research in the less-studied area of body perception is then evaluated. The second half of the lecture considers how perceivers go beyond the raw information provided in order to infer other peoples' intentions from faces and bodies, and to infer their stable personality traits.

Key Chapter (students recommended to read before the class)
Chapter 5. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Calder, A. J., & Young, A. W. (2005). Understanding the recognition of facial identity and facial expression. *Nature Reviews Neuroscience, 6*(8), 641-651.

Haxby, J. V., Hoffman, E. A., & Gobbini, M. I. (2000). The distributed human neural system for face perception. *Trends in Cognitive Sciences, 4*(6), 223-233.

Kanwisher, N., & Yovel, G. (2006). The fusiform face area: a cortical region specialized for the perception of faces. *Philosophical Transactions of the Royal Society B-Biological Sciences, 361*(1476), 2109-2128.

Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science, 308*(5728), 1623-1626.

Todorov, A., Said, C. P., Engell, A. D., & Oosterhof, N. N. (2008). Understanding evaluation of faces on social dimensions. *Trends in Cognitive Sciences, 12*(12), 455-460.

Week 5 (26th October 2017)

Understanding Others

The overarching question of the lecture is: how do we understand the mental states of others? Mental states consist of knowledge, beliefs, feelings, intentions and desires. The process of making this inference has more generally been referred to as mentalising. The term is generally used in a theory-neutral way, insofar as it is used by researchers from a wide spectrum of views. It could be contrasted with the term theory-of-mind which has essentially the same meaning but has tended to be adopted by those advocating a particular position, namely the notion that there is a special mechanism or component for inferring mental states. According to some researchers, this theory-of-mind mechanism cannot be reduced to general cognitive functions such as language and reasoning, or those involved in imitating. These arguments lie at the heart of the social neuroscience enterprise in that they raise important and divisive issues about the nature of the mental and neural processes that support social behaviour and the extent to which they are related to other aspects of cognition. Others regard mentalising as arising solely out of more basic neural mechanisms involved in mapping other to self (i.e. mirror systems), There might be a general tendency to simulate the behaviour of others on ourselves (internally in our minds and brains) even if we do not overtly reproduce it (as observable behaviour on our bodies). This lecture first considers empathy and then goes on to consider theory-of-mind. Finally, the question of whether autism can be explained in terms of a developmental deficit in mentalising will be considered.

Key Chapter (students recommended to read before the class)
Chapter 6. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Apperly, I. A. (2008). Beyond Simulation-Theory and Theory-Theory: Why social cognitive neuroscience should use its own concepts to study "theory of mind". *Cognition, 107*(1), 266-283

Decety, J., & Jackson, P. J. (2004). The functional architecture of human empathy. *Behavioral and Cognitive Neuroscience Reviews, 3*, 71-100.

Frith, U., & Frith, C. D. (2003). Development and neurophysiology of mentalising. *Philosophical Transactions of the Royal Society of London B, 358*, 459-472

Oberman, L. M., & Ramachandran, V. S. (2007). The simulating social mind: The role of the mirror neuron system and simulation in the social and communicative deficits of autism spectrum disorders. *Psychological Bulletin, 133*(2), 310-327

Saxe, R. (2006). Uniquely human social cognition. *Current Opinion in Neurobiology, 16*(2), 235-239.

Southgate, V., & Hamilton, A. F. C. (2008). Unbroken mirrors: Challenging a theory of autism. *Trends in Cognitive Sciences, 12*, 225-229.

Week 6 (2nd November 2017)
Playback as a tool for exploring animal minds: comparative insights into social neuroscience *Guest Lecture by Prof. Karen McComb*

Week 7 (9th November 2017)

Interacting with Others: Cooperation and Pro-social Behaviour

This chapter is about two kinds of interaction: cooperation and competition. Cooperation entails sharing of commodities (e.g. food) and knowledge, and providing helping behaviour (e.g. if someone is injured). This type of behaviour is also termed altruism, but with the added twist that altruism is often described as 'selfless' in that no personal gain is obtained. To be cooperative and pro-social, short-term interests have to be balanced against the longer term gains to be had through group living. Individuals working together in groups may increase chances of survival by, for instance, hunting as a group, and through shared knowledge and skills. In humans, at least, cooperative interactions between individuals are predicated upon trust, i.e. the belief that others will contribute fairly. People who receive the benefits of cooperation but don't contribute to the group themselves are termed free loaders (or free riders), and groups typically impose sanctions on those who free load such as social exclusion, physical punishment or fines. Such sanctions require norms to regulate or enforce cooperation, and these norms require consensual agreement as to what is 'fair' or 'right'. Various social exchange 'games' have been conducted using the methods of social neuroscience to understand the brain-mechanisms involved in sharing resources for a common good and this has given rise to the field of 'neuro-economics'. In this lecture, I'll discuss ways in which altruism may evolve within a population and also consider whether the neural mechanisms for different kinds of altruism are likely to be conserved across species. The second part of the lecture will consider the neural basis of social decision making using economic games.

Key Chapter (students recommended to read before the class)
Chapter 7. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Fehr, E., & Fischbacher, U. (2004). Social norms and human cooperation. *Trends in Cognitive Sciences, 8*(4), 185-190.

1291–1298.

Nowak, M. A. (2006). Five rules for the evolution of cooperation. *Science, 314*(5805), 1560-1563.

Rilling, J. K., Gutman, D. A., Zeh, T. R., Pagnoni, G., Berns, G. S., & Kilts, C. D. (2002). A neural basis for social cooperation. *Neuron, 35*(2), 395-405.

Sanfey, A., Rilling, J., Aaronson, J., Nystron, L., & Cohen, J. (2003). Probing the neural basis of economic decision-making: An fMRI investigation of the ultimatum game. *Science, 300*, 1755-1758

Week 8 (16th November 2017)

Relationships

Human relationships primarily consist of friends, family and a romantic partner. We invest a huge amount of time and effort into cultivating and maintaining these relationships. Even though most of us no longer live in closely knit communities of extended families, we find new ways of staying in touch with our inner circle such as Facebook. Why? We affiliate with others because we like it and, we like it because it is good for us. It is good for us not only for the material benefits that accrue from cooperation, but also because it has protective effects on our health. Social support in terms of supportive family interactions and the presence of an intimate and confiding relationship has a protective effect against conditions such as heart disease. In contrast loneliness and lack of intimacy may have the opposite effect; for instance, being associated with greater cognitive decline in old age. This chapter will start by considering love; whether it is a unitary concept, and how it may be represented in the brain. This theme is continued by considering attachment more generally, focussing on infant-mother bonds and romantic bonds. Finally, the chapter will consider separation, social exclusion, and loneliness.

Key Chapter (students recommended to read before the class)
Chapter 8. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Carter, C. S., DeVries, A. C., & Getz, L. L. (1995). Physiological substrates of mammalian monogamy: The prairie vole model. *Neuroscience and Biobehavioral Review, 19*, 303-314.

Carter, C. S. (2003). Developmental consequences of oxytocin. *Physiology and Behavior, 79*, 383-397

De Haan, M., & Gunnar, M.R. (2009). *Handbook of Developmental Social Neuroscience*. New York: The Guilford Press. Contain good and up-to-date chapters on relationships and attachment (including animal models).

Gillath, O., Bunge, S. A., Shaver, P. R., Wendelken, C., & Mikulincer, M. (2005). Attachment-style differences in the ability to suppress negative thoughts: Exploring the neural correlates. *NeuroImage, 28*, 835-847.

Vritcka, P., Anderson, F., Grandjean, D., Sander, D., & Vuilleumier, P. (2008). Individual differences in attachment style modulates human amygdala and striatum activity during social appraisal. *PLoS One, 3*, e2868.

Week 9 (23rd November 2017)
NO LECTURE Please use the time to prepare your assessment

Week 10 (30th November 2017)

Groups and Identity

One might expect that social neuroscience is ill suited for addressing questions at the group level. However, group influences exert their pressure on individual minds (and brains) and social neuroscience, like much of social psychology, can make a distinction between individuals acting as group members (women, men, straights, gays, Blacks, Whites, etc.) and individuals acting as individuals. This lecture considers several issues relating to groups and identity. Firstly, the chapter considers the various components that are typically considered to comprise 'the self'. These components consist of those that operate primarily at the level of the individual (e.g. our own personality, our sense of being in control of our actions) and those that operate primarily at the level of the group (e.g. our social identity, cultural beliefs and traditions). The second part of the lecture considers the way in which groups are assigned and evaluated, giving particular attention to the issue of prejudice. The lecture will conclude with a discussion of how religion may be understood from a social neuroscience perspective.

Key Chapter (students recommended to read before the class)
Chapter 9. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:

Amodio, D. M. (2008). The social neuroscience of intergroup relations. *European Review of Social Psychology, 19*, 1-54

Gillihan, S. J., & Farah, M. J. (2005). Is self special? A critical review of evidence from experimental psychology and cognitive neuroscience. *Psychological Bulletin, 131*(1), 76-97.

Kelley, W. M., Macrae, C. N., Wyland, C. N., Caglar, S., Inati, S., & Heatherton, T. F. (2002). Finding the self? An event related fMRI study. *Journal of Cognitive Neuroscience, 14*, 785-794

Phelps, E. A., O'Connor, K. J., Cunningham, W. A., Funayama, E. S., Gatenby, J. C., Gore, J. C., & Banaji, M. R. (2000). Performance on indirect measures of race evaluation predicts amygdala activation. *Journal of Cognitive Neuroscience, 12*, 729-738

Zhu, Y., Zhang, L., Fan, J., & Han, S. H. (2007). Neural basis of cultural influence on self-representation. *Neuroimage, 34*(3), 1310-1316

Week 11 (7th December 2017)

Morality, Aggression and Anti-social Behaviour

Anti-social behaviour can be defined as any behaviour that violates the social norms of a particular culture. Broadly speaking, we can discriminate between two different kinds of social norms: conventional norms and moral norms. Examples of conventional norms might include not swearing or vomiting in public, dressing neatly for a job interview and shaking hands when being introduced. Examples of moral norms include not hitting other people or respecting their property rights (e.g. not committing theft or deliberate damage). Whereas conventional norms may arise via consensus (or authority), moral norms may stem from a basic concern for the welfare of others (including empathy). Social neuroscience studies of morality concern the extent to which moral judgments derive from emotional processes, cognitive reasoning about 'right' and 'wrong', or some combination of these. The extent to which a sense of morality can be considered to be common across individuals and cultures will be considered. The second part of the lecture focuses mainly on aggression and violence. Do violent or aggressive acts exist to regulate social norms and to right a perceived wrong? Do we need to 'switch off' our empathic tendencies in order to aggress, or are some people naturally unempathic?

Key Chapter (students recommended to read before the class)
Chapter 10. Ward, J. The Student's Guide to Social Neuroscience.

Other Reading:
Hauser, M.D. (2006). *Moral Minds*. London: Abacus.
Sinnott-Armstrong, W. (2008). *Moral Psychology, Volume 3: The Neuroscience of Morality, Emotion, Brain Disorders and Development*. Boston, MA: The MIT Press

Week 12 (10th December 2016): NO LECTURE