Evolution and Development of Social and Technical Intelligence

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Fridays 11 - 1  
Old Library
Evolution and Development of Social and Technical Intelligence 2013-2014:
“Social Learning and the Evolution of Culture”

THE AIMS OF THE COURSE

The overall aim of this module is to give final year Honours and MSc students an advanced understanding of a topic in the evolution and development of mind (perhaps more accurately, a cluster of closely inter-related topics) that is currently exciting interest in several branches of psychology (particularly evolutionary, comparative, developmental and neuro-psychology), and indeed also in such ‘sister’ disciplines as ethology, anthropology and philosophy. The current focus will be on “Social Learning and the Evolution of Culture”.

Our human ‘capacity for culture’ is arguably one of the main features that has evolved in a form that makes us distinct from the rest of the animal world. So in this course, we will ask such questions as: ‘how is culture transmitted and acquired in humans?’ — ‘which, if any, aspects of culture occur amongst other animals?’ – and ‘what can we reconstruct of the evolutionary history of culture?’

Broadly, the psychological processes underlying cultural transmission are described as ‘social learning’ – learning from, or through, others. In this course we shall be trying to discriminate several different kinds of social learning, from the simplest to the more complex forms of imitation and teaching, and assess what we know about them not only in children, but in other species from apes to dolphins to parrots. The content of what is learned about include both social and technical aspects of behaviour, thus extending to tool use and other forms of culture relating to physical objects, as well as cultural transmission of behaviour (for example, ‘games’ and ‘morality’ in non-human primates).

The aims of the course are: to make students familiar with some of the principal theoretical issues in this rapidly developing field, together with examples of the kinds of empirical results which underlie them; to encourage your ability to summarise these and critically appraise them; and - as SH students - to think about how they relate to the overall subject matter of Psychology. So much has been published, even in the last few years, that we shall have to be highly selective in what we cover in class, but the aim is to give you the basis to explore various topics which take your particular fancy by listing further readings.

These aims are additional to our general educational ones embodied in the design of these senior modules as a whole, of course. These are detailed in the honours handbook.
HOW TO SUCCEED – YOUR OBJECTIVES

Of course, what we’d all like is for you to enjoy the course immensely, read around the topic for sheer pleasure, and get a fantastic grade as a happy by-product. However, some of you might be seeking a ‘how-to’ for getting a good grade in this particular module. Here it is:

To get a good grade, you need to be able to give well-informed, well-structured and well-argued answers to the kinds of questions which make up the assessments.

For ‘well informed’, you need to read widely. Start with the readings given.
For ‘well structured’, you need to arrange your answer to make it easy for the reader to follow you from one point to the next. This takes practice.
For ‘well argued’, you need to select from your bank of knowledge those pieces of information which specifically address the question asked and demonstrate to the reader why the piece of information you have written down is relevant. This also takes practice.

With this in mind, here is a list of what I suggest your objectives for each week should be:

- Read the weekly readings before the sessions in which we discuss them, to get the most out of both readings and discussions. This is essential. It’s best to come with a printed copy to have in front of you, with comments scribbled on it and/or with a sheet of notes to guide your verbal contribution.
- Read the papers actively: don’t just jot down summary notes, but at several points in going through the paper, pause and write down what you think about what’s been said before. At the end, also pause and write down a few thoughts about what you think are the key points to learn from the paper.
- Consider if there is a further paper or two (e.g. cited in core readings) which might be interesting to follow up. This might be in the further readings listed – you might find it yourself.
- Practice the skill of looking at a question and thinking what is really needed to answer that question (not the one you might have prepared for!).

This is partly advice about ‘assessment technique’, but it’s mostly an attempt to lay out some specific objectives for your studies in this course which should not only make the enterprise more stimulating and enjoyable for you, but make you a better psychologist, and develop habits of analysis which will stand you in good stead in a whole range of careers in future.
This level of module is intended to take final year honours students to the leading edge of current research, and encourage a sophisticated grasp of one particular area. Thus, the format is a seminar, in which students will be expected to have read and thought about material, and be prepared to discuss it.

Each week, core reading is set, and in addition students will sometimes read different, although of course related, material. So, when we meet at each session to analyse the issues, you will need to be prepared to discuss some material which you can assume everyone has read, but also be prepared to communicate with others about things they might not have read. (The abilities to analyse and discuss shared information, and communicate new information to others, are among the most important “transferable skills” in which we train our students.)
READINGS

The greater part of this course, like other SH modules, will be taken up by guided private study. For the readings we shall use several different sources, including journal articles and chapters in various books. Core readings are available through the Library’s Online Reading List service (RefWorks), or downloadable as pdfs from the journal via SAULCAT (and often through Google Scholar), or on short loan as hard copies in the South Street Library. Often all these options are available, especially for core articles each week.

GIVING YOUR PRESENTATIONS

Each week, most of the session will be given over to discussion of the readings set the previous week. This discussion will be initiated through brief presentations by members of the class. You will make your presentation using PowerPoint. (You can use Prezi if you prefer – please try not to make anyone motion-sick!)

Students often tend to spend too long on their presentation and give too much detail to begin with. Here is what you should do:

1. Summarise the key aspects of the paper you read, using no more than a couple of PowerPoint slides to highlight these points, together with supplementary images if you want to use them - e.g. key diagrams or figures reproduced from the paper, or your own. Remember, all in the class will have read the paper (won’t you?!), so this is really reminding them of the most important bits, as you see it.

2. Most important is to spend another few minutes raising points for class discussion: for example - what did you think was the most important contribution(s) in the paper? - what were your major criticisms? - what do you still find incomprehensible or puzzling? - what do you think would be the best research line to take next? (a new experiment? further observations?).

* Finish with a single slide that lists your points for discussion, that we can keep up on the board while we talk.

See the Powerpoint template available for this in Moodle.

[Note on font size: use a size legible at the back of the lecture room! - I suggest 20 pt is an appropriate size for smallest text – and Arial font is a clear one].
Assessment is made up as follows:
25% Single Initial Essay
75% Two Final Essays

Initial Essay
"Compare and contrast human culture with that of other species. In this comparative light, what are human culture’s most distinctive characteristics?"
This essay should be completed according to the very specific guidelines for size and format in the Honours Handbook and uploaded as a Word document to MMS by 5 p.m. on Monday 10th November. Write the essay title and your ID number clearly on the top, make sure you number the pages and conform to the formatting requirements specified for Honours Continuous Assessment Essays in the Honours Handbook.

Final Essays
On Thursday 4th December, three essay titles will become available on Moodle at 9am. You are to upload 1,000-word essays for two of these to MMS by 5pm on the same day. Please use Times or Arial font, with font size set at 12 and 1.5 line spacing. No reference list is required and references can be cited in abbreviated form, counting as one word each, as in the following examples: - (Caldwell&Horner2010’ Galef-etal2009). The idea of this assessment is somewhat in the spirit of a seen examination, insofar as you will be have to be well prepared to deal with questions on any part of the course at this point. However, this approach will allow you more time to think, consult reference works and submit a legible, typed essay. This worked well last year.

Please note that all essay submissions will be checked for similarity to other essays or published works using Turnitin. Cutting and pasting of text (which Turnitin picks out) is not allowed. Turnitin also shows any text duplicated between candidates’ submissions in different years. Always write in your own words!
THE COURSE

Week 1: Introductory Overview
In this introductory session we’ll do two main things: outline how the course will work, and give an overview of the area, in part revising introductory JH material.

Reading
Your priority between weeks 1 and 2 should be the preparatory reading for the next session (i.e. week 2 – see further below). However, according to your needs and interests, the following sources from my own papers used for the overview I give in week 1 should prove helpful, either now or in coming weeks.


Week 2: Human culture and cumulative cultural evolution
For all seminars you should come with notes prepared on each reading, corresponding to what the presenter is to cover (see page 5). Thus a guide for all seminars is to be ready to say:

- What do you regard as the key aspects (theories, hypotheses, data, conclusions) of the paper?
- What do you consider the most valuable scientific contribution?
- What are your major criticisms?
- What do you find most incomprehensible and confusing? (can we, as a class, sort it out?)
- What do you think would be the best research line to take next?
- Any other thoughts or questions you would like to raise for class discussion?

Target Readings for seminar
- Tomasello, Mike, Kruger, A. C., & Ratner, H. H. (1993). Cultural learning. Behavioral and Brain Sciences 16, 495-511 (+ cover at least 1 commentary). [this is a classic paper by one of the most influential figures in the field]
- Caldwell, Christine A. & Millen, A. E. (2009). Social learning mechanisms and cumulative cultural evolution: is imitation necessary? Psychological Science 20, 1478-1483. You can view the seminar Christine Caldwell gave here in 2008, which is archived so you can listen to her and flip
through her slides (and borrow, for example, pics of the spaghetti towers) at –

http://psy.st-andrews.ac.uk/events/previous_speakers.shtml

Further reading/ updates
See readings for Week 1, and: -

Week 3: The question of animal culture: Primates (Dr Lewis Dean)

Target readings for seminar
Laland, Kevin. N. & Hoppitt, W. (2003). Do animals have culture? Evolutionary Anthropology, 12, 150-159. [a powerful critique especially of field reports]

Further reading

Week 4: The question of animal culture: Non-primates (Dr Mike Webster)
**Target readings for seminar**


**Further reading/updates**


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**Week 5: The nature of social learning in primates**

**Target readings for seminar**


**Further reading/updates**


**Week 6: Social learning in non-primates (Dr Mike Webster)**

**Target readings for seminar**

**Further reading/updates**

**Week 7: Rational imitation and theory of mind**

**Target readings for seminar**

**Further Reading/updates**
Week 8: Over-imitation and selective imitation

Target readings for seminar


Further reading/updates


Week 9: Strategic social learning (Dr Keelin Murray)

Target readings for seminar:


Further reading/updates


Week 10: Evolution and development of morality

**Target readings for seminar**

**Further reading**
Sloane, S., Baillargeon, R., & Premack, D. (2012). Do infants have a sense of fairness?. *Psychological science, 0956797611422072.*

Week 11: Animal teaching

**Target readings for seminar**

**Further reading**

**FURTHER GENERAL READING**

The easiest way to read into more depth on a topic which takes your particular interest is through the reference lists in the papers already listed above, or browsing in the following:


See also [www.cultureevolves.org](http://www.cultureevolves.org)
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Target Reading</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>19 Sept</td>
<td>Overview</td>
<td>See list</td>
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<tr>
<td>26 Sept</td>
<td>Human culture and cumulative, cultural evolution</td>
<td>Tomasello Caldwell</td>
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<tr>
<td>3 Oct</td>
<td>Animal culture: primates</td>
<td>Van Schaik Perry Laland</td>
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<tr>
<td>10 Oct</td>
<td>Animal culture: non-primates</td>
<td>Rendell Madden</td>
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<td>17 Oct</td>
<td>Social learning in primates</td>
<td>Biro Call</td>
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<tr>
<td>24 Oct</td>
<td>Social learning in non-primates</td>
<td>Moore Galef</td>
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<tr>
<td>31 Oct</td>
<td>Rational imitation and theory of mind</td>
<td>Gergely Range Buttelmann</td>
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<td>7 Nov</td>
<td>Over-imitation and selective imitation</td>
<td>Lyons Nielsen</td>
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<td>14 Nov</td>
<td>Social learning strategies</td>
<td>Morgan Rendell</td>
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<td>21 Nov</td>
<td>Morality</td>
<td>Brosnan Hamlin Schmidt</td>
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<tr>
<td>28 Nov</td>
<td>Teaching</td>
<td>Caro Franks Thornton</td>
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<tr>
<td>5 Dec</td>
<td>Final Assessment</td>
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