

## **PBS 3: Social and Developmental Psychology**

### **2018/19 Paper Guide**

**Course Organiser:** Dr S. van der Linden

#### **Aims and Objectives**

- To introduce students to a range of research and theories which have been and are relevant to contemporary work in social and developmental psychology.
- To develop:
  - an understanding of central debates within the disciplines.
  - the capacity for critical analysis of those theories and the evaluation of the evidence used to test them.
  - oral and written communication skills through discussion in supervision and essay writing.
  - skills in the use of on-line resources e.g. bibliographies & data bases.

#### **Course overview**

This paper builds on the foundation established in the first year and prepares students for advanced work in psychology in Part II. Along with PBS4 it provides the breadth required of any Psychology degree which is recognised by the British Psychological Society. The course content is divided into a number of discrete topics, but students should pay attention to the points of connection both within and between the social and developmental parts of the paper with respect to both theoretical and methodological issues.

The Michaelmas lectures on Developmental Psychology begin with an introduction to models of development. The focus then turns to social and emotional development covering topics related to emotion, self-regulation, family, siblings, and peer-relationships. The term concludes with a more cognitive focus examining the child's executive functioning and number concepts, and executive functioning.

The Lent lectures begin with an introduction to the main concerns of Social Psychology and the methodological challenges it faces. A constant challenge has been how to balance the analysis of the individual with the analysis of the social world that an individual inhabits. In particular, understanding the role of the individual in creating that social world while at the same time being shaped by it.

#### **Workload**

The paper is taught by means of lectures and supervisions. There are no practicals.

It should occupy one quarter of a student's time across the course of the academic year. In practice, this means that a diligent student who attends the lectures and takes the recommended 6-8 supervisions will spend 170-180 hours in private study across the eighteen weeks of the Michaelmas and Lent Full Terms preparing for those lectures and supervisions and consolidating learning afterwards. How this time is spread across the year is a matter of personal learning style. Students should seek the advice of their Directors of Studies if they run into difficulties planning their time. Given the organisation of the lectures, students should focus on developmental topics in the Michaelmas and social ones in the Lent.

**Lectures** – all at 12.00-13.00 (Mill Lane Lecture Rooms)

#	Date	Topic	Lecturer
M1	Oct 8	Models of development	Prof Mark Johnson
M2	Oct 10	Language development	Dr Kaili Clackson
M3	Oct 15	Piaget and constructivism I	Dr Susan Imrie
M4	Oct 17	Piaget and constructivism II	Dr Susan Imrie
M5	Oct 22	Family influences on development I	Dr Susan Imrie
M6	Oct 24	Family influences on development II	Dr Susan Imrie
M7	Oct 29	Sibling and peer relationships	Prof Claire Hughes
M8	Oct 31	Risk and resilience	Prof Claire Hughes
M9	Nov 05	Emotional regulation	Prof Claire Hughes
M10	Nov 07	Social influences on theory of mind I	Prof Claire Hughes
M11	Nov 12	Social influences on theory of mind II	Prof Claire Hughes
M12	Nov 14	Developmental Neuroscience I	Dr Sarah Lloyd Fox
M13	Nov 19	Developmental Neuroscience II	Dr Sarah Lloyd Fox
M14	Nov 21	Educational neuroscience	Dr Lincoln Colling
M15	Nov 26	Number concepts	Dr Lincoln Colling
M16	Nov 28	Developmental dyscalculia	Dr Lincoln Colling
<i>Christmas Vacation</i>			
L1	Jan 21	Introduction to Social Psychology	Dr David Good
L2	Jan 23	Persons & Situations I	Dr Jason Rentfrow
L3	Jan 28	Persons & Situations II	Dr Jason Rentfrow
L4	Jan 30	Persons & Situations III	Dr Jason Rentfrow
L5	Feb 04	Attitudes I	Dr David Good
L6	Feb 06	Attitudes II	Dr David Good
L7	Feb 11	Attitudes III	Dr David Good
L8	Feb 13	Morality, culture, & evolution I	Dr Lee de Wit
L9	Feb 18	Morality, culture, & evolution II	Dr Lee de Wit
L10	Feb 20	Morality, culture, & evolution III	Dr Lee de Wit
L11	Feb 25	Social norms & influence I	Dr Sander van der Linden
L12	Feb 27	Social norms & influence II	Dr Sander van der Linden
L13	Mar 04	Social norms & influence III	Dr Sander van der Linden
L14	Mar 06	Interaction & Identity I	Dr David Good
L15	Mar 11	Interaction & Identity II	Dr David Good
L16	Mar 13	Interaction & Identity III	Dr David Good

**Contact details**

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## **Supervisions**

Students should cover 6-8 topics from across the paper bearing in mind the need to answer questions on both social and developmental psychology in the examination. They should discuss with their Directors of Studies and their Supervisors which topics will provide a balance between broad coverage and a focus on their personal interests. Students should attend all lectures and not just those related to their chosen supervision topics as there are numerous points of connection between the different areas covered. It is also important to remember that the lectures as a set provide background material for many topics in Part IIB.

## **Readings**

Each lecturer on the course provides readings relevant to the particular topics that he or she covers. These are presented below. Individual lecturers and supervisors may well provide additional more specialised references in the light of specific matters raised in their lectures. The lists provided are intended as a resource for you and your supervisor. There is absolutely no expectation that you will read everything. With the help of your supervisor, the substance of the lectures and your own interests you should focus on a subset that is relevant to you.

## **Mode of assessment**

The paper is examined by one three-hour unseen examination. Section A of the exam will cover social psychology and section B will cover developmental psychology. Students will be required to answer three questions including at least one question from each section.

## Developmental Psychology

### Models of development (M1)

At first glance, babies seem to have very limited capacities to take in information, evaluate it, and respond effectively, and their understanding of the world in which they live appears primitive at best. With incredible rapidity, however, unique personalities, powerful social relationships, and fascinating cognitive and communicative skills become apparent, as children undergo the fastest and most dramatic changes to occur at any stage in the lifespan. Exactly how developmental change can be explained has fascinated developmental psychologists and neuroscientists for more than a century, and we assess our current understanding this term, beginning with an examination of the basic developmental processes that appear to underlie development.

#### Readings

- Anastasi, A. (1958). Heredity, environment and the question "how?" *Psychological Review*, 65, 197-208.
- Caspi, A., Sugden, K., Moffitt, T.E., Taylor, A., Craig, I.W., Harrington, H., McClay, J., Mill, J., Martin, J., Braithwaite, A., & Poulton, R. (2003). Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. *Science*, 301, 386-389.
- Johnson, M.H. & de Haan, M. (2015). *Developmental Cognitive Neuroscience (4<sup>th</sup> Ed.)*. Wiley Blackwell. (see Chapter 1 & 13)
- Lerner, R. M. (Ed.) (2006). *Handbook of child psychology, Volume 1, Theoretical models of human development*. Hoboken NJ: Wiley. (especially chapters 1, 2, 5, and 6).
- \*Lerner, R. M., Lewin-Bizan, S., & Warren, A. E. A. (2011). Concepts and theories of human development. In M H. Bornstein & M. E. Lamb (Eds.), *Developmental science: An advanced textbook* (6<sup>th</sup> ed.; pp. 3-50). New York: Psychology Press.
- Overton, W. F. (2015). Process and relational-developmental systems. In R. M. Lerner (Gen. Ed.), W. F. Overton & P. C. Molenaar (Eds.), *Theory and Method. (Vol.1) Handbook of child psychology and developmental science (7th ed.)*. Hoboken, NJ: Wiley.
- Oyama, S. (2000). *The ontogeny of information: Developmental Systems and Evolution (2<sup>nd</sup> Ed.)* Duke University Press.

#### Questions

- 1) What exactly develops in developmental psychology?
- 2) Compare nativist, empiricist and constructivist theories of development.
- 3) In 1958, Anastasi wrote a paper called 'Heredity, environment, and the question 'how''. How much better is our understanding of development in 2018 than it was in 1958?

### Language development (M2)

Infants typically say their first words at about 10 months, and put together their first two-word sentence at about 18 months. By their fifth birthday, they have a vocabulary of over 5,000 words and can convey remarkably complex information. How do they do it?

### Readings

- Goswami, U. (2008). *Cognitive Development: the Learning Brain*. London: Psychology Press. (Ch. 5)
- \*Hoff, E. (2015). Language development. In M H. Bornstein & M. E. Lamb (Eds.), *Developmental science: An advanced textbook* (7<sup>th</sup> ed.). New York: Psychology Press.
- \*Oates, J., & Grayson, A. (Eds.) (2004). *Cognitive and language development in children*. Oxford: Blackwell.
- Tomasello, M. (2006). Acquiring linguistic constructions. In W. Damon & R. M. Lerner (Gen. Eds.), D. Kuhn & R. S. Siegler (Vol. Eds.), *Handbook of child psychology, Volume 2, Cognition, perception, and language* (Vol. 6; pp. 255-298). Hoboken NJ: Wiley.

### Questions

1. Infants employ powerful statistical and social learning mechanisms in the service of language acquisition. Discuss the evidence for these mechanisms.
2. What role does the language environment play in early language development?

### Piaget and constructivism (M3 & M4)

The nature-nurture debate constitutes one of the enduring controversies shaping developmental psychology. Another involves the ways in which people are characterized – either as passive recipients of external influence or as active participants in their own development and transformation and the extent to which behaviour and behavioural development are context dependent. These lectures will examine Piaget's theory of cognitive development, and his influence on conceptions of development.

### Readings

- Bliss, J. (2010). Looking back: recollections of Jean Piaget, *The Psychologist*, 23 (5), 444-446.
- Flavell, J. H., Miller, P. H., & Miller, S. A. (2001). *Cognitive development* (4<sup>th</sup> edition). New York: Prentice Hall.
- Goswami, U. (2008) *Cognitive Development: the Learning Brain*. London: Psychology Press. (Ch. 11)
- Kuhn, D., & Franklin, S. (2006). The second decade: What develops (and how). In W. Damon & R. M. Lerner (Gen. Eds.), D. Kuhn & R. S. Siegler (Vol. Eds.), *Handbook of child psychology, Volume 2, Cognition, perception, and language* (Vol. 6; pp. 953-993). Hoboken NJ: Wiley.
- Lerner, R. M. (2002). *Concepts and theories of human development* (3<sup>rd</sup> edition). Mahwah NJ: Erlbaum.
- Oates, J., & Grayson, A. (Eds.) (2004). *Cognitive and language development in children*. Oxford: Blackwell.
- Opper, S., Ginsburg, H. P., & Brandt, S. O. (1989). *Piaget's theory of intellectual development* (3<sup>rd</sup> edition). New York: Prentice Hall.
- \*Siegler, R. S. & Alibali, M. W. (2004). *Children's thinking*. New York: Prentice Hall, 2004.
- Wadsworth, B. J. (2005). *Piaget's theory of cognitive and affective development: Foundations of constructivism*. New York: Allyn & Bacon.

### Questions

1. What makes Piaget's theory of cognitive development distinct?
2. Discuss the validity of Piaget's claim to be a genetic epistemologist.
3. In what ways did Piaget's view of cognitive development transform theoretical conceptions of development?

### Family influences on development (M5 & M6)

Two lectures will explore family influences on development. The first lecture will examine family influences on development in traditional families focusing on four inter-related components; the quality of parent-child relationships with particular attention to attachment theory and parenting styles; the psychological wellbeing of parents; the psychological characteristics of the child; and the wider social environment of the family. The second lecture will examine family influences on development in non-traditional families focusing on families with single parents, cohabiting parents, and stepparents, as well as new family forms such as families with same-sex parents and families created by assisted reproductive technologies. The relative contribution of family structure and family processes for development will be explored.

### Readings

- \*Golombok, S. (2015). *Modern families: Parents and children in new family forms*. Cambridge: Cambridge University Press
- Cassidy, J. & Shaver, P. (2008) *Handbook of Attachment : theory, research and clinical applications, 3<sup>rd</sup> edition*. New York: Guilford Press. Section 1.
- Lamb, M. E. & Lewis, C. (2015). The role of parent-child relationships in child development. In M.H. Bornstein & M. E. Lamb (Ed.) *Developmental science: An advanced textbook* (Seventh edition; pp. 535-586). London & New York: Psychology Press.
- Golombok, S. (2013). Families created by reproductive donation. *Child Development Perspectives*, 7(1), 61-65.
- Parke, R. (2013). *Future Families: Diverse Forms, Rich Possibilities*. Oxford: Wiley.
- Lamb, M.E. (2012). Mothers, fathers, families, and circumstances. Factors affecting children's adjustment. *Applied Developmental Science*, 16, pp.98-111.
- Goldberg, A. (2009) *Lesbian and gay parents and their children*. American Psychological Association. Chapter 5.

### Questions

1. Do psychologists place too much emphasis on the importance of children's attachment relationships with their parents?
2. Do children benefit from growing up in a traditional family?

### Sibling Relationships (M7)

Most of us grow up with brothers and sisters, and there are striking individual differences in the quality of sibling relationships. Yet it is only in the last 20 years that this topic has received systematic investigation. The first of this pair of lectures provides an overview of the different theoretical approaches to investigating sibling relationships before exploring the various factors that help explain contrasts in the nature of children's sibling relationships: from child factors (e.g., age, gender-

composition, temperament) to family factors (e.g., differential parenting, marital conflict) and wider societal factors (e.g., socio-economic status, ethnic background). The second lecture is focused on the consequences of variation in sibling relationship quality. This relationship is often emotionally charged, and parents frequently compare siblings with each other. Siblings may therefore directly foster both aggression and low self-esteem. Indirect paths via negative parent-child relationships have also been documented. In general, however, sibling relationships are very supportive, and may foster children's imaginative play, co-operative skills, emotion and theory of mind understanding.

### *Readings*

- Brody, G.H. (1998). Sibling relationship quality: Its causes and consequences. *Annual Review of Psychology, 49*, 1-24.
- Dunn, J., & McGuire, S. (1992). Sibling and peer relationships in childhood. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 33* (1), 67-105.
- Hughes, C. (2011). *Social understanding, social lives. From toddlerhood through to the transition to school*. London: Psychology Press. Chapter on sibs and peers
- Kramer, L. (2010). The essential ingredients of successful sibling relationships: An emerging framework for advancing theory and practice *Child Development Perspectives, 4* (2), 80-86.
- McHale, S.M., Updegraff, K.A., & Whiteman, S.D. (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family, 74* (5), 913-930.
- \*White., N & Hughes, C. (2017): *Why siblings matter. The importance of relationships with brothers and sisters for children's development and wellbeing*. Psychology Press. (see especially chapters 1 and 3-7)

### *Questions*

1. Compare and contrast at least two different theoretical approaches to understanding sibling relationships.
2. Explain how siblings can help or hinder children's social or cognitive development.
3. From peas in a pod to chalk and cheese: Why do sibling relationships show such striking variability?

### **Risk and Resilience (M8)**

The goals of this lecture are to outline how and why theoretical models of risk and resilience have been refined over time and to give some concrete examples of how these theoretical shifts have informed our understanding of child development. In particular, this lecture aims to highlight the complex and dynamic interplay between different domains and levels of risk and protective factors. As a link with the previous lectures on sibling relationships, this lecture uses variability in children's reactions to becoming a sibling to explore the processes that underpin resilience in the face of this early major life event.

### *Readings*

- Boyce, C.J. & Wood A.M. (2011). Personality prior to disability determines adaptation: agreeable individuals recover lost life satisfaction faster and more completely. *Psychological Science 22*, 1397-402

- Masten, A.S. (2001). Ordinary magic: Resilience processes in development  
*American Psychologist*, 56, 227-238.
- McLloyd, VC (1998). Socioeconomic disadvantage and child development. *American Psychologist* 53, 185-204.
- Meins, L. (2017). Over-rated: the predictive power of attachment. *The Psychologist*, 30, 20-24
- Noltmeyer, A.L. & Bush, K.R. (2013). Adversity and resilience: A synthesis of international research. *School Psychology International*, 34, 474–487
- Rutter, M. and the English and Romanian Adoptees (ERA) study team (1998). Developmental catch-up, and deficit, following adoption after severe global early privation. *Journal of Child Psychology and Psychiatry* 39, 465-476.
- Sapienza, J.K., & Masten, A.S. (2011). Understanding and promoting resilience in children and youth. *Current Opinion in Psychiatry*, 24, 267-273.
- Ungar, M. (2015). Practitioner review: Diagnosing childhood resilience - A systemic approach to the diagnosis of adaptation in adverse social and physical ecologies. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 56, 4-17.
- Werner, E. (1989, 2000). "Children of the Garden Island." *Scientific American* (reprinted in the Blackwell Reader in Developmental Psychology - A Slater & D Muir Eds) 260: 106-11
- \*White., N & Hughes, C. (2017): *Why siblings matter. The importance of relationships with brothers and sisters for children's development and wellbeing.* Psychology Press. (see especially chapters 2 & 7)

### Questions

1. How have ideas about risk and resilience changed since Bowlby's work and why?
2. Why should resilience in childhood be characterized as 'ordinary magic' (Masten, 2001)?
3. What can research on the transition to siblinghood teach us about the factors that underpin children's early resilience?

### Emotional Regulation (M9)

Research interest in emotion regulation has grown rapidly in a number of different disciplines, as our understanding of the interplay between biology, cognition, behavior and culture has increased. At a cognitive level, this topic overlaps with the topics of theory of mind and executive function. At a behavioural level, emotion regulation is key to successful social interactions. At a functional level, emotional regulation is central to accounts of individual differences in resilience. Thus this lecture, like the previous lecture, illustrates the interplay between different themes in this paper.

### Readings

- Adamson, L.B., Frick, J.E. (2003) The still face: A history of a shared experimental paradigm *Infancy*, 4, 451-473.
- \*Campos, J.J., Frankel, C.B., & Camras, L. (2004). On the nature of emotion regulation. *Child Development*, 75 (2), pp. 377-394.



- Derryberry, D., & Rothbart, M.K. (1997). Reactive and effortful processes in the organization of temperament. *Development and Psychopathology*, 9 (4), pp. 633-652.
- Eisenberg, N., Spinrad, T.L., & Eggum, N.D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology*, 6, 495-525.
- Keenan, K. (2000). Emotion dysregulation as a risk factor for child psychopathology. *Clinical Psychology: Science and Practice*, 7 (4), 418-434.
- Kochanska, G., & Aksan, N. (2006). Children's conscience and self-regulation. *Journal of Personality*, 74 (6), 1587-1617.
- LaFreniere, P. (2013). Children's play as a context for managing physiological arousal and learning emotion regulation. *Psihologijske Teme*, 22 (2), 183-204.
- Morris, A.S., Silk, J.S., Steinberg, L., Myers, S.S., & Robinson, L.R. (2007). The role of the family context in the development of emotion regulation. *Social Development*, 16 (2), 361-388.
- \*Thompson, R.A. (1991). Emotional regulation and emotional development. *Educational Psychology Review*, 3 (4), 269-307.

### Questions

- 1) How have research ideas about emotion regulation changed over the past three decades and why?
- 2) How should we explain the variability that is seen in infant reactions to the still face paradigm?

### **Social Influences on Theory of Mind (M10 & M11)**

In this lecture we consider the range of social influences on individual differences in children's performance on tests of theory of mind. Alongside cognitive correlates (e.g., executive function and language), accelerated development of false-belief comprehension is reported for securely attached children, children from large families and children from families characterised by high levels of feeling-state talk. Evidence from hearing impaired children and twins also highlight the importance of conversations for theory-of-mind development. Finally, cultural contrasts in the ages at which children acquire a theory of mind point to significant social influences on this key cognitive skill

### Readings

- McMahon, C.A., Bernier, A. (2017) Twenty years of research on parental mind-mindedness: Empirical findings, theoretical and methodological challenges, and new directions. *Developmental Review*,
- Devine, R.T. & Hughes, C. (2014). Relations between false belief understanding and executive function in early childhood: a meta-analysis. *Child Development*, 85, 1777-1794.
- Hughes, C., Devine, R.T. & Wang, Z. (2017). Does parental mind-mindedness account for cross-cultural differences in preschoolers' theory of mind? *Child Development*, Early Online View, DOI: 10.1111/cdev.12746
- Hughes, C. & Devine, R.T. (2015). Individual differences in theory of mind from preschool to adolescence: Achievements and directions. *Child Development Perspectives*, 9, 149 – 153.

\*Hughes, C. & Devine, R.T. (2015). A social perspective on theory of mind. In M. E. Lamb and R.M. Lerner (Eds.). *Handbook of Child Psychology and Developmental Science (7th ed.)*, Volume III: Social, Emotional and Personality Development (Chapter 14). Hoboken, NJ: Wiley.

Milligan, K., Astington, J. W. & Dack, L. A. (2007). Language and theory of mind: Meta-analysis of the relation between language ability and false-belief understanding. *Child Development*, 78, 622 - 646.

### Questions

1. How do families help and hinder the development of young children's theory of mind?
2. To what extent are social influences on theory of mind similar or contrasting for typical and atypical groups?

### Developmental Social Neuroscience (M12 & M13)

In this pair of lectures we consider how our understanding of infant brain function and social cognition has increased over the last two decades, driven largely by the availability of new methods to study development. The first of this pair of lectures overviews the tools that researchers now use to understand the developing brain in infancy: from increasingly accurate looking time measures using eye-tracking technology to structural and functional magnetic resonance imaging (fMRI), functional near infrared spectroscopy (fNIRS) and electroencephalography (EEG). The second lecture focuses on typical trajectories of social brain development in infancy as well as the consequences of atypical pathways in infants at risk for compromised development. In particular, there will be a focus on the use of prospective longitudinal research to further our understanding of the development of autism.

### Readings

de Haan, M. and Thomas, K.M. (2002). Applications of ERP and fMRI techniques to developmental science. *Developmental Science*, 5, 335-343.

Farran, E. & Karmiloff-Smith, A. (2012). *Neurodevelopmental Disorders across the Lifespan: A Neuroconstructivist Approach*. Oxford University Press.

Johnson, M. H., Griffin, R., Csibra, G., Halit, H., Farroni, T., de Haan, M., et al. (2005). The emergence of the social brain network: evidence from typical and atypical development. *Development and Psychopathology*, 17(3), 599-619.

Lloyd-Fox, S., Blasi, A., and Elwell, C.E. (2009). Illuminating the developing brain: The past, present and future of functional near infrared spectroscopy. *Neuroscience and Biobehavioral Reviews*, 34, 269-284.

Giedd, J.N., Lenroot, R., Raznahan, A., Shaw, P., Gogtay, N., and Rapoport, J.L. (2010). Structural magnetic resonance imaging of childhood and adolescent brain development in health and illness. *Neuron*, 67, 728-734.

Power, J.D., Fair, D.A., Schlaggar, B.L. and Petersen, S.E. (2010) The development of human functional brain networks. *Neuron*, 67, 735-748.

Szatmari, P. (2017) Complexity and parsimony in natural history studies of children with autism spectrum disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 56(8), 636-638.

Varcin, K.J. & Jeste, S.S. (2017) The emergence of autism spectrum disorder: insights gained from studies of brain and behaviour in high-risk infants. *Current Opinion in Psychiatry*, 30(2), 85-91.

### Questions

- 1) How do neuroimaging methods compare in terms of spatial resolution, temporal resolution and ease of use with infants?
- 2) How have our views changed on how infants are able to respond to their social world?
- 3) Why do we use prospective longitudinal models to study infants at risk for compromised development?

### Educational Neuroscience (M14)

Non-invasive brain imaging methods are increasingly used in psychological and developmental research often with the intention of informing educational practice. However, a non-trivial connection has to be built between basic brain data and potential educational applications. Most importantly, a critical knowledge of methodology is absolutely necessary so that the goodness of studies could be judged and the studies' added value (relative to purely behavioural research) could be evaluated. First, the lecture will review critical strengths and weaknesses of mainstream brain imaging methods. Second, some concrete examples will illustrate how neuroscience methods can provide otherwise difficult to access knowledge about cognitive development in primary school children. In addition, some typical interpretation problems will be pointed out.

### Readings

- \* Gazzaniga M (2008 or 2013); *Cognitive Neuroscience: The biology of the mind. Chapter. Development and Plasticity.*
- \* Gazzaniga M (2008 or 2013); *Cognitive Neuroscience: The biology of the mind. Chapter. The methods of Cognitive Neuroscience.*
- \* Poldrack, R. A. (2006). Can cognitive processes be inferred from neuroimaging data? *Trends in Cognitive Sciences*, 10(2), 59–63.
- \* Nikolaus Kriegeskorte, W Kyle Simmons, Patrick S F Bellgowan, Chris I Baker (2009), Circular analysis in systems neuroscience: the dangers of double dipping, *Nature Neuroscience* 12, 535 – 540
- Eimer M (1998), The lateralized readiness potential as an on-line measure of central response activation processes. *Behavior Research Methods, Instruments and Computers*. 30, 146-156
- Bryce D, Szűcs D, Soltész F, Whitebread D (2011), The development of inhibitory control: a single-trial Lateralized Readiness Potential study. *Neuroimage*. 57, 671-685.
- Szűcs D, Goswami U (2007), Educational neuroscience: Defining a new discipline for the study of mental representations. *Mind, Brain and Education*. 1, 114-127.
- Bruer JT (1997), Education and the brain: A bridge too far. *Educational Researcher*, 26, 4-1611, 2195-2206.

## Questions

1. Is there a best non-invasive method for studying brain function in children?
2. In what areas do you think neuroscience research can inform educational practice?
3. Illustrate some major dangers in (mis)interpreting brain imaging data.

## Numerical Development (M15)

Mathematical skills are increasingly important if individuals are to thrive in today's technologically-oriented society. However, evidence suggests that many adults in developed societies possess quite immature mathematical abilities. A 2011 Department for Business, Innovation and Skills survey in the United Kingdom found that 49% of the adult population could only attain standards comparable to 11 year-old children in mathematics (whereas 14.9% achieved such standards in literacy). Furthermore, 23.7% of adults reached only the standards typical for 9 year-old children (compared to 7.1% for literacy). As may be expected from these figures, research on mathematical learning problems lags well behind research on literacy problems, and takes longer to affect educational instruction. Crucially, the significance of early years in grounding mathematical development is increasingly recognized. The lecture will outline major conflicting theories of the development of mathematical abilities and will discuss recent evidence from large scale studies focusing on the UK context.

## Readings

- \* Ansari D (2008), Effects of development and enculturation on number representation in the brain. *Nature Reviews Neuroscience*. 9, 278-291
- Halberda, J., Mazocco, M.M., & Feigenson, L. (2008). Individual differences in non-verbal number acuity correlate with math achievement. *Nature*, 455(7213), 665-8.
- Gebuis T, Reynvoet B. The interplay between nonsymbolic number and its continuous visual properties. *J Exp Psychol Gen* 2011: doi:10.1037/a0026218.
- Holloway ID, Ansari D. Domain-specific and domain-general changes in children's development of number comparison. *Dev Sci* 2008; 11(5): 644–649.
- Bull, R. & Scerif, G. (2001). Executive functioning as a predictor of children's mathematics ability: Inhibition, switching, and working memory. *Developmental Neuropsychology*, 19, 273–293.
- Geary, D. C. (2011). Cognitive predictors of achievement growth in mathematics: a five year longitudinal study. *Developmental Psychology*, 47, 1539–1552.
- Raghubar, K.P., Barnes, M.A., & Hecht, S.A. (2010). Working memory and mathematics: A review of developmental, individual difference, and cognitive approaches. *Learning and Individual Differences*, 20, 110–122.
- Dumontheil, I. & Klingberg, T. (2011). Brain activity during a visuospatial working memory task predicts arithmetical performance 2 years later. *Cerebral Cortex*. doi:10.1093/cercor/bhr175
- Fuhs MW, McNeil NM (2013), ANS acuity and mathematics ability in preschoolers from low-income homes: contributions of inhibitory control. *Developmental Science*. 16, 136-148.
- Szűcs D, Nobes A, Devine A, Gabriel F, Gebuis T (2013), Visual stimulus parameters seriously compromise the measurement of approximate number system acuity and comparative effects between adults and children. *Frontiers in Psychology*. 4:444.

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### Questions

1. Evaluate critically the measurement of the so called 'number sense'.
2. How various cognitive abilities are thought to be linked to mathematical development/achievement of children?
3. Discuss the report of Halberda et al. (2008) Nature, from a critical perspective.

### Developmental dyscalculia (M16)

We define developmental dyscalculia as persistently weak mathematical performance of developmental origin, related to the weakness of some kind(s) of cognitive function(s) and/or representation(s); appearing when *concurrent* motivation to study mathematics and access to appropriate mathematics education is normal. The causes of developmental dyscalculia are poorly understood. Hence, it is not surprising that there is *no* generally agreed upon *functional* definition of developmental dyscalculia. In fact, conditions which may or may not be equivalent to DD are labelled by many different names in developmental research. We will critically review some conflicting definitions and theories of developmental dyscalculia and related empirical data.

### Readings

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### Questions

1. Detail some major theories of developmental dyscalculia.
2. How does the interplay of non-symbolic and symbolic magnitude representations relate to the question of the definition of dyscalculia?
3. Do you think dyscalculia can be traced back to a single factor, or is a heterogenous umbrella term?

## Social Psychology

### Introduction (L1)

Social Psychology might be thought of as a very tractable subject. We are all social agents, and to navigate our social world we need to have at least some understanding of it. Yet nothing could be further from the truth. Allport's proposal that it is the study of "*how the thoughts, feelings, and behaviors of individuals are influenced by the actual, imagined, or implied presence of others*" requires only a brief reflection to reveal what a can of worms must lie within. This lecture will offer a broad overview of the subject and the diversity of theories and methods to be found therein. There are many important connections to other parts of psychology and other disciplines, but also many disputes over the "right way" to do enquiry in this area. The readings contain both an overview of the field and a number of chapters which are relevant to this part of the paper.

#### Readings

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- Baumeister, R. F., & Bushman, B. J. (2010). *Social Psychology and Human Nature* (2nd ed.). Belmont, CA: Thomson/Wadsworth.
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- Hewstone, M. and W. Stroebe (2007). *The scope of social psychology: theory and applications*. Hove, Psychology Press.
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### Persons & Situations (L2, L3 & L4)

There is considerable empirical evidence that social behaviour is not determined solely by personality traits or environmental factors, but by interactions of the two. However, that was not the position taken by previous generations of social psychologists. This lecture series will start with a brief historical overview of theory and research concerned with person-environment interactions, beginning with the person-situation debate. We will then cover more contemporary research that has investigated the ways in which psychological traits and various features of the social and physical environment influence behaviour and psychological well-being.

#### Readings

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- Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating five factor theory and social investment perspectives on personality trait development. *Journal of Research in Personality*, 39(1), 166-184.
- Rentfrow, P. J. (2013). Geographical differences in personality. In P. J. Rentfrow (Ed.) *Geographical psychology: Exploring the interaction of environment and behavior* (pp. 115-137). Washington, DC: American Psychological Association.
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## Questions

1. Discuss the claim “Once individuals are in their chosen situation, their words and actions are genuine reflections of their personalities”.
2. Why are people motivated to seek out particular situations and avoid others?
3. How do social roles and norms influence psychological development?

## Morality, culture, and evolution (L5, L6, & L7)

Research over the last half century has revealed a variety of ways in which human behaviour deviates from what might be predicted by naïve model of economic self-interest. One of the most interesting of these deviations is the finding that humans engage in ‘altruistic punishment’. In other words, people are willing to use their own money to pay to punish others who are not cooperating, even when this has no immediate benefit to themselves (hence ‘altruistic punishment’). One particularly interesting feature of this finding is that it seems to be relatively universal across human cultures. Findings like this has convinced many that some aspects of our moral psychology must have been shaped by evolution, and that our inclination to punish those violating certain norms may have been central to the development of human cooperation. This set of lectures will explore research that has argued that a) morals are not only a product of cultural evolution, b) our evolutionary past has shaped our development as moral agents and c) that morality plays a significant role in enabling human cooperation. Some of the real-world implications of these perspectives will also be explored.

## Readings

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### *Questions*

1. Does a sensitivity to norm violations facilitate human cooperation?
2. Has evolution shaped the range of moral concerns that humans find intuitive?
3. Is morality innate?
4. Compare and contrast debates regarding how humans learn language with how they learn morality.

### **Attitudes (L8, L9 & L10)**

Attitudes have often been described as the cornerstone of psychology, and with good reason. In one way or another they reflect the fundamentals of an individual's perspective on the world. They constitute a key element in how they explain that world to themselves, and their own behaviour to other people. However, moving beyond their manifestation in everyday discourse, and their impoverished presence in a questionnaire, to either an understanding of underlying psychological processes or a prediction of intention and action has always been difficult. The Theory of Planned Behaviour offers an important attempt to draw these different threads together, and allow an understanding of how an individual's attitudes play a role in their social life. That social life can, of course, lead to a change in one's attitudes, and understanding the process of change is important if we are to properly understand the place of attitudes in social psychology. The link between attitudes and behaviour and the possibility of changing both is increasingly recognised as fundamental to the resolution of many problems which face contemporary society.

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- Albarracín, D., B. T. Johnson, et al. (2005). *The handbook of attitudes*. Mahwah, N.J., Lawrence Erlbaum Associates Publishers. See Ajzen, I., & Fishbein, M. The influence of attitudes on behavior.
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- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123-205). New York: Academic Press.
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- Sutton, S. (1998). Predicting and explaining intentions and behavior: How well are we doing? *Journal of Applied Social Psychology*, 28, 1317-1338.
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- Wood, W. (2000). Attitude change: Persuasion and social influence. *Annual Review of Psychology*, 51, 539-570.

### *Questions*

1. Under what conditions can we make reasonable predictions about what someone will do given a knowledge of their attitudes?
2. “Ultimately, the Theory of Planned Behaviour demonstrates that attitudes are only a small factor in the prediction of a person’s behaviour”. Discuss
3. What leads to attitude change? Are there processes in this which can be exploited by those who wish to change our opinion of an idea or a product?
4. What is an attitude? In what way are attitudes fundamental to social psychology?

## Social Norms and Influence (L11, L12 & L13)

Humans navigate the social world by paying close attention to the thoughts, feelings, and behaviors of others. The goal of these lectures is to critically outline how people perceive and are influenced by social normative processes. In particular, we will discuss how people (mis)perceive and internalize social norms and how norms interact with -but are distinct from- other social-psychological constructs, such as attitudes, identity, and personality. We will explore where social norms come from, how they evolve and spread in populations, and ultimately, under what conditions they can influence human behavior in stable and predictable ways. A special focus is placed on understanding how norms influence prosocial behaviour, altruism, and cooperation in real-world social dilemmas.

### Readings

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- Mannes, A. E., Soll, J. B., & Larrick, R. P. (2014). The wisdom of select crowds. *Journal of Personality and Social Psychology*, 107(2), 276-299.
- \*Miller, D. T., & Prentice, D. A. (2016). Changing norms to change behavior. *Annual Review of Psychology*, 67, 339-361.
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- Slovic, P., Zionts, D., Woods, A. K., Goodman, R., & Jinks, D. (2011). Psychic numbing and mass atrocity. In E. Shafir (Ed.), *The Behavioral Foundations of Public Policy* (pp. 126-142). Princeton, NJ; Princeton University Press.
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### Questions

1. In what ways are social norms related to, yet distinct from, attitudes and personality?
2. Under what conditions are social norms likely to exert a powerful influence on human social behavior? Discuss at least three conditions that can help facilitate social change.
3. Discuss several ways in which normative processes can both undermine and promote human cooperation in real-world social dilemma situations.

### Interaction and Social Identity (L14, L15 & L16)

The sense of being a person both separate from and embedded in a social world has been a topic of interest for social psychologists since the earliest days of the subject. Despite that long interest, and its resonances with other disciplines from philosophy and theology to neuroscience, the phenomena has remained quite inscrutable. The first lecture in this set of three will provide an overview of the range of positions which have been offered so as to place the second and third lectures in context.

The second and third lectures will focus on contemporary accounts of how an individual's sense of their social identity is built through their understanding of the groups with which they identify, and how in turn those groups are understood by their relationship to other groups. These intergroup facets of social identity are arguably reinforced by the manner in which social experiences are perceived interpreted and remembered, and their meaning felt.

This in turn can lead to important social consequences including ethnic prejudice and violence. There are interesting developmental questions raised by this work and also

ways in which the insights it offers can be applied to inhibit the pathway from identity and values to violence.

In a world where the potential for membership of multiple groups is facilitated by the organisation of society and new communication technologies, there are numerous questions raised about the coherence of a single sense of self. There has been a concern with this issue ever since the late 19<sup>th</sup> century and it has been studied under a number of headings although is now typically referred to as Dissociative Identity Disorder. This part of the course will conclude with a brief examination of this issue.

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#### *Questions*

1. Why does our conception of others play such an important role in our conception of ourselves?
2. Is hostility to outgroups an inevitable consequence of selfhood?
3. If a person belongs to many groups, do they have multiple selves?
4. How is our social identity formed?