U24199 Psychology project
U24199 Registering your supervisor preferences
Psychology 2019-20

We try to assign you to one of the psychology supervisors you would like to work with and to help with this we ask you to indicate your preferences. While we cannot promise to assign you to one of these, we do our best. To work out who you would prefer to supervise you, please read the list of Psychology staff research interests/preferred topic areas.

Select five supervisors and enter their initials in the preferences registration form. It helps if you add the topic number to show which of their areas of interest most appealed to you. You must not list any supervisor more than once.

The deadline for completion of the preference list is 1pm on Monday April 8th 2019. You may not list more than <u>one</u> topic area from any one supervisor.

Allocation of students to supervisors will completed by the end of week 12 at the very latest. You will be notified by email. Students not submitting their preferences as outlined above will be allocated to a supervisor according to the spaces available. When you have been assigned to a supervisor you will need to contact your supervisor to arrange a meeting as soon as possible to discuss the topic and supervision and to get the requisite form signed.

When you have met with your supervisor you should complete the M199T form (see moodle forms). You must do this before you leave for the summer.

Please note that each supervisor will take a maximum of six students and some will take considerably fewer.

As some research areas are more popular than others, you should think carefully about each of your supervisor preferences as you could be allocated to any one of the five supervisors you list or to a supervisor not on your preferred list. Given the size of the department, we are not able to guarantee providing you with a supervisor from your preferred list. (Analysis of the module marks of those students who were not assigned to a supervisor of their choice over the last few years have shown that they were not in any way disadvantaged.)

Tips for selecting supervisors

1) Make sure you select more than one supervisor as a 'preferred' choice, as this will increase the likelihood of your being allocated to one of your preferences.

2) Consider supervisors from all three research groups and/or supervisors whom you do not know well. Some lecturers do most of their teaching at Masters level and you may not know them, but you should still include them in your preference list if their research interests appeal to you.

U24199 Psychology project

Supervisors and their preferred topic areas for 2019-20

(The list below is followed by short description of each interest area)

GdA1: Cultural influences on parents' representations of their children's mathematics lea
GdA2: Immigration and the development of cultural identity

OA1: Spelling processes in children and adults.
OA2: Cloze probability in language production.

AB1:   Development/Evaluation of Assessment Instruments: General Motor Competence
AB2:   Development/Evaluation of Assessment Instruments: Handwriting & Keyboarding
AB3:   Examination of Action Representations
AB4:   Parental views on skill acquisition & physical activity in their children

MB1:   Romantic experiences that challenge cultural scripts
MB2:   On the cusp of a future self: the power of desired and feared selves

VC1:   The development of writing, spelling and other literacy skills in children and adults

ED 1 Theory and Health Behaviour : Alcohol
ED 2 : Theory and Environmental Behaviours

DF1:   The reproducibility project: improving science in Psychology

NGG1: Linking early phonological acquisitions and later lexical acquisition
NGG2: Learning the meaning of abstract words

LH1:   Prospective memory

BK1: The psychology of climate and ecological breakdown

SK1:   Projects in cognitive psychology and brain processes

JL1:   The nature of sex differences in aspects of cognition and/ or behaviour.
JL2:   The 'Dark Triad' model of human personality

AL1:   Why do people listen to music?
AL2:   Musical taste and in-group favouritism
AL3:   Musical omnivores & open-earedness

MM1: Being 'psychologically-minded'
MM2: Autobiographical memory and psychological mindedness/mental state talk
MM3: Mind-mindedness and reflective function

MP1: Visual attention and awareness
MP2: Representation of visual objects in visual cognition

CR1: Life transitions and autobiographical memory
CR2: Self-image fluency

MSJ1: Health Attitudes and Behaviour

NS1: What is the impact of increased use of technological devices on language use and understanding?
NS2: What is the impact of stigmatising language on attitudes to mental health conditions?
NS3: How do we understand words with multiple meanings?

LW1: Cognitive aspects of sleeplessness in children and adolescents
LW2: Sleep/Sleep Disorders

KW1: Motor learning: Motor imagery
KW2: Motor learning: Consolidation
KW3: Doing two things at once: Dual task interference

Projects supervised by Professor Guida de Abreu ~ GdA

I am interested in supervising cultural-developmental psychology projects, using qualitative methodologies, in the following areas:

GdA1: Cultural influences on parents' representations of their children's mathematics learning

Differences between school and out-of-school numerical practices have been widely researched in studies of culture and mathematical cognition. These studies have shown that different ways of dealing with mathematical practices in and outside school are deeply related with the historical, cultural and social context of these practices. However, there is still very few studies that explore the relationship between home and school numeracy practices. In school contexts, such as in England, where in the last years parents have been called to play a key role in their children's schools learning no doubt these studies are priorities. One of the key obstacles in the relationship between home and school numeracy practices is that often they are conceptualised by the school as being the same practice. But, whether parents will interpret and give the same meaning to the mathematics embedded in a practice as the child's teacher, is a question for empirical investigation. Using qualitative methods this study will examine cultural influences on parents' representations of their children's school mathematical learning.

I am interested in supervising two types of studies:
        1) interview based studies;

2) analysis of parent-teacher conversations in school meetings (e.g. parents evenings).

Abreu, G. de & Cline, T. (2005). Parents' representations of their children's mathematics learning in multiethnic primary schools. *British Educational Research Journal, vol. 31, n.6, 697-*.722.

Abreu, G. de & Elbers, Ed. (2005) Introduction: the social mediation of learning in multiethnic classrooms. *European Journal of Psychology of Education.* Vol.xx, n 1, pp. 3-11

Abreu, G. de, Cline, T., & Shamsi, T. (2002). Exploring ways parents participate in their children's school mathematical learning: case studies in a multi-ethnic primary school. In G. de Abreu, A. Bishop, & N. Presmeg (Eds.), *Transitions between contexts of mathematical practices* (pp.123-147)*.* Dordrecht: Kluwer.

Gorgorio, N. & Abreu, G. de (2009). Social representations mediating practices in multicultural mathematics classrooms. *Educational Studies in Mathematics.* Volume 72, Number 1 / September, 2009, 61-76
http://www.springerlink.com/content/3ut10436j1520jx6/

McMullen, R. & Abreu, G. de (2011) Mothers'experiences of their children's school mathematics at home: the impact of being a mother-teacher *Research in Mathematics Education.13 (1)* 59-74, DOI 10.1080/14794802.2011.550727

GdA2: Immigration and the development of cultural identity

In our current world in which more and more people are constantly crossing cultural boundaries (travelling, moving, immigrating) questions of cultural identity development are especially important. This project will examine relationships between key components of cultural identity development, such as, self-identification style, evaluative attitudes, sense of belonging, and involvement in socio-cultural practices (home and school). Qualitative methods, such as interviews and written life stories with young people/ and or adults, can be used to explore questions such as:

● What image do immigrant/ minority ethnic young people who attend (or adults who attended) schools in England have of themselves? How do they perceive the impact of their school experiences in their development and cultural identification?
● How do minority ethnic people view the consequences of their cultural identification for their actions and relations to others: how they think about them, feel about them and act towards them?

Abreu, G. de & Hale, H. (2009). 'Self' and 'other' imposed withdrawing in social interactions at school: Portuguese students talk about their experiences in adjusting to schooling in Britain. In Cesar, M & Kumpulainen, K. (eds.) Social interactions in multicultural settings, (pp. 91-115). Sense publishers*]*http://www.sensepublishers.com/catalog/files/9789087907174PR.pdf

Hale, H. C., & de Abreu, G. (2010) Drawing on the Notion of Symbolic Resources in Exploring the Development of Cultural Identities in Immigrant Transitions. *Culture & Psychology,* 16(3), 395

Kenna Bourke, Guida de Abreu & Clare J. Rathbone (2018) "I'm Just Who I Am": Self-Continuity and the Dialogical Self in a Study of Migrants, *Journal of Constructivist Psychology, DOI:* 10.1080/10720537.2018.1488227

O'Sullivan-Lago, R., Abreu, G. de, & Burgess, M. (2008). "I am a human being like you": An Identification Strategy to Maintain Continuity in a Cultural Contact Zone. *Human Development*, 51(5-6), 349-367.

O'Sullivan-Lago, R., Abreu, G. de (2008). Going Back To Their Roots: Maintaining Continuity in the Dialogical Self through Signs. *Psychology & Society, 1*(1) 42-43. http://www.psychologyandsociety.ppsis.cam.ac.uk/__assets/__original/2008/10/O Sullivan_Abreu.pdf [online journal]

Projects supervised by Dr Olivia Afonso ~ OA

OA1: Spelling processes in children and adults.

It is widely assumed that spelling can be achieved by means of two different routes. The lexical route allows retrieval of the orthographic form of known words from long-term memory; the sublexical route applies the phonology-to-orthography correspondences existing in the language to provide a plausible spelling for unknown words or nonwords. However, it is also assumed that the relative involvement of these two depends on several factors, including the level of lexical knowledge of the writer or some characteristics of the language. Projects in this area might investigate the relative involvement of the spelling routes in monolingual or bilingual adults and/or children. Projects may focus on changes on the written production of words throughout the development or compare cognitive processing during word production in native English speakers versus learners of English as an Additional Language.

<u>Recommended readings.</u>

Afonso, O., Suárez-Coalla, P., González-Martín, N., & Cuetos, F. (2018). The impact of word frequency on peripheral processes during handwriting: A matter of age. *The Quarterly Journal of Experimental Psychology, 71*, 695-703. doi: 10.1080/17470218.2016.1275713

Afonso, O., Suárez-Coalla, P., & Cuetos, F. (2015). Spelling impairments in Spanish dyslexic adults. *Frontiers in Psychology: Language Processes, 6*. doi: 0.3389/fpsyg.2015.00466.

Afonso, O. & Álvarez, C. J. (2011). Phonological effects in handwriting production: Evidence from the implicit priming paradigm. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 37*(6), pp. 1474-1483.

Baus, C., Costa, A., & Carreiras, M. (2013). On the effects of second language immersion on first language production. *Acta Psicológica, pp. 142*, 402-409. doi: 10.1016/j.actpsy.2013.01.010

OA2: Cloze probability in language production.

Cloze probability refers to the probability with which the end of a sentence can be predicted given the previous context (Block & Baldwing, 2010; Taylor, 1953). The effect of this variable during reading is well-known and has been repeatedly observed to modulate eye movements (Luke & Christianson, 2016) and brain potentials (Kutas & Hillyard, 1984). However, the factors determining why some words are expected more than others have been surprisingly under-researched. Also understudied has been the effect of cloze probability in language production. Projects in this area will involve the collection of data on a sentence completion task in which chronometric measures of the response will be analysed (namely, latencies and duration of the production). Different variables may be manipulated in order to better understand the cloze probability effect.

<u>Recommended readings.</u>

Kutas, M., & Hillyard, S. A. (1984). Brain potentials during reading reflect word expectancy and semantic association. *Nature, 307*, 161–163.

Van Petten, C., & Kutas, M. (1990). Interactions between sentence context and word frequency in event-related brain potentials. *Memory & Cognition, 18*(4), 380–393.

Projects supervised by Professor Anna Barnett ~ AB

I am interested in supervising projects within the broad area of perceptual-motor skill. Some projects may lend themselves to work in pairs or small groups - with students sharing some aspects of data collection and data analysis. Suggestions for projects (that could be undertaken with children or adults) are listed below but I am happy to discuss the possibility of supervising other projects within this topic area. For projects involving children, access to schools and DBS (Disclosure & Barring Service) checks need to be arranged well in advance.

AB1: Development/Evaluation of Assessment Instruments: General Motor Competence

The development of motor control and coordination is a fundamental aspect of development generally. Motor competence is necessary for performing everyday life skills, for communication, learning and for keeping physically active. However, some individuals have difficulty in this area, for example those with Developmental Coordination Disorder (DCD). A range of assessment tools are available to help educational and health professionals identify and support individuals who lack motor competence. A project in this field could involve the development of and/or an examination of the psychometric properties (e.g. reliability, validity) of one or more of these instruments.

Some more specific ideas are listed below:

(i) Validation of an adult motor skills questionnaire
There are several screening instruments available that are designed to identify motor impairment in children and to describe their range of difficulties. However, there is a paucity of instruments suitable for adults, even though motor impairment in adulthood is now well recognised. I have recently developed a new adult motor skills questionnaire but the reliability and validity of this tool needs to be examined. A project in this area would involve testing the psychometric properties of this new tool (i.e. seeing how well it works) by choosing aspects of reliability and validity to investigate.

Barnett, A.L. (2014). Is there a "Movement Thermometer" for Developmental Coordination Disorder? *Current Developmental Disorders Reports.* DOI 10.1007/s40474-014-0011-9

Barnett, A. & Peters, J. (2004). Motor Proficiency Assessment Batteries. In D. Dewey & D.E. Tupper (Eds). *Developmental Motor Disorders. A Neuropsychological Perspective.* New York, NY: Guilford Press.

Cairney, J., Missiuna, C. Veldhuizen, S. & Wilson, B. (2008). Evaluation of the psychometric properties of the developmental coordination disorder questionnaire for parents

(DCD-Q): Results from a community based study of school-aged children. *Human Movement Science*, 27, 932–940.

Kirby, A., Edwards, L., Sugden, D and Rosenblum, S. (2010) The development and standardization of the Adult Developmental Co-ordination Disorders/ Dyspraxia Checklist (ADC). *Research in Developmental Disabilities*, 31, 131-139

AB2: Development/Evaluation of Assessment Instruments: Handwriting & Keyboarding skills

Handwriting and keyboarding are important transcription skills, allowing students to keep up with classwork and demonstrate their knowledge and communication skills in written examinations. Students with handwriting and/or keyboarding difficulties may benefit from support to develop their skills and/or to have extra time to complete work. The currently available assessment tools to help educational professionals identify and support individuals with handwriting/keyboarding difficulties are limited. A project in this area would involve the revision of an existing tool or development of a new tool to assess handwriting and/or keyboarding skill and testing its psychometric properties (i.e. seeing how well it works) by choosing aspects of reliability and validity to investigate.

Some more specific ideas are listed below:

(i) Examination of the Handwriting Proficiency Screening Questionnaire (HPSQ)
The HPSQ has been developed in Israel to help teachers identify children with handwriting difficulties, yet it's suitability for use in the UK has not been well established. A project in this area would involve working with teachers and possibly allied health professionals to check the content and construct validity of this tool.

(ii) Examination of the HPSQ for children and/or adults
Another version of this tool has been developed in Israel for children to rate their own handwriting. There is a need to examine its validity in the UK and there is also scope for developing a similar tool for adults to rate different aspects of their handwriting and/or keyboarding performance.

Barnett, A., Henderson, S., Scheib, B. & Schulz, J. (2011). Handwriting difficulties and their assessment in young adults with DCD: Extension of the DASH for 17-25 year olds. *Journal of Adult Development*, 18, 114-121.

Connelly, V., Gee, D. & Walsh, E. (2006). A comparison of keyboarded and handwritten compositions and the relationship with transcription speed, *British Journal of Educational Psychology*, 77 (2), 479–492.

Rosenblum, S. (2008). Development, reliability and validity of the Handwriting Proficiency Screening Questionnaire (HPSQ). *The American Journal of Occupational Therapy*, 62 (3), 298-307.

Tal Saban M, Ornoy A, Grotto I, Parush S. (2012). Adolescents and Adults Coordination Questionnaire: Development and Psychometric Properties. *The American Journal of Occupational Therapy*. 66(4):406-413.

AB3: Examination of action representations

We all perform a wide variety of motor actions in everyday life. Many of these involve hand movements such as reaching and grasping and also the use of various tools (e.g. a pen, scissors, cutlery, kitchen utensils). It has been argued that in order to perform these actions,

we need to form a mental representation or internal model of the action to help us plan and generate the appropriate movements. A project in this area could focus on the nature of these action representations, how they develop in childhood, change in older adults or how they relate to general motor competence.

Cacola, P., Martinez, A. & Ray, C. (2013). The ability to modulate peripersonal and extrapersonal reach space via tool use among the elderly. *Archives of Gerontology and Geriatrics*, 56 (2), 383-388.

Gabbard, C., Cacola, P. & Bobbio, T. (2012). The ability to mentally represent action is associated with low motor ability in children. A preliminary study. *Child: Care, Health and Development,* 38 (3), 390-393.

Molina, M., Tijus, C., & Jouen, F. (2008). The emergence of motor imagery in children. *Journal of Experimental Child Psychology*, 99 (3), 196-209.

Projects supervised by Dr Mark Burgess ~ MB

General Comments:

Each of my dissertation projects involves interviews and uses the theoretical perspectives I outlined in U24125 Personality and Individual Differences. Your aim will be to understand the essential psychological elements of your participants' experiences. For this, you will need to interview 8 people from a distinct group. You would identify one group to interview and gain a detailed understanding of their experiences. It is very important that you work out whether you are likely to be able to gain access to an appropriate group prior to selecting either of these topics as a dissertation option.

MB1: Romantic experiences that challenge cultural scripts

Love is a process rather than a fixed state, but it feels particularly good when there is congruence between a person's inner states, the interpretation of those states, a person's subsequent behaviour and their ability to present themselves honestly in the wider social world. However, love and romantic relationships often do not have that congruence.

People's experiences sometimes run counter to the scripts laid down by their particular cultural group. How do those people interpret their experiences, make sense of who they are, and what do they think those experiences mean for their future? In this research you will draw on Hermans' *Dialogical Self* or Spinelli's *Relational Self* as they both offer a good framework for understanding the dynamic inner thought that accompanies people's experiences.

The research could focus on a variety of relationship experiences, including sexual orientation, consensual non-monogamies, and infidelity from the perspective of the perpetrator. The research could also focus on people who challenge the cultural script by not seeking, or 'achieving' romance; for example, being single in a culture that values being part of a couple, and being asexual.

Fromm, E. (1957). *The art of loving.* Thorsons: London

Hermans, H. J. M. (2001). The dialogical self: Toward a theory of personal and cultural positioning. *Culture and Psychology, 7,* 243-281.

Hermans, H. J. M. (2014). Self as a society of I-positions: A dialogical approach to counseling. *Journal of Humanistic Counseling, 53,* 134-159.

Milton, M. (2014). *Sexuality: existential perspectives.* Monmouth. PCCS Books

Spinelli, E. (2015). *Practising exisential therapy: the relational world.* London: Sage

MB2: On the Cusp of a Future Self: The Power of Desired and Feared Selves

The ability to imagine a future self is a peculiarly human capacity and can act as a motivation to change one's behaviour in the here-and-now. A young person may want to be a future Olympian, or a member of the military, or a clinician. Such a person can begin to order their life such that they make steps towards achieving that 'future self'. Cross and Markus (1990) point out that 'what an individual is striving for … is at least as significant for explaining individual functioning as what the individual currently is'. This is probably true, but in some ways 'what the individual currently is' (i.e., their self) is already the self they would like to become. For example, the would-be Olympian already trains in the manner of a top-level athlete despite not having yet achieved their eventual goal. This is what Sartre (1943) meant when he said that 'I am what I am not'. The more an individual commits themselves to a future self in the here-and-now, the more authentic they will feel. This process comes with challenges. Sometimes, what the person would like to become is at odds with what their parents, or culture, believes would be best for them.

In this research you will investigate a group of people who are approaching a decision point in life where they are considering committing themselves to a particular future. This could be athletes, artists, musicians, or other professions. Alternatively, you could flip this on its head and interview people who are preparing to put a particular existence behind them (such as people getting ready for retirement). Your interviews would also include asking people about their 'feared self', what they truly do not want to become.

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science, 312,* 1913-1915.

Carstensen, L. L. Isaacowitz, D. & Charles, S. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54,* 165-181

Cooper, M. (2017). *Existential therapies.* London: Sage

Cross, S. E. & Markus, H. (1991). Possible selves across the lifespan. *Human Development, 34,* 230-255.

Grysman, A. Prabhaker, J. Anglin, S. M. & Hudson, J. A. (2013). The time travelling self: Comparing self and other in narratives of past and future events. *Consciousness and Cognition, 22,* 742-755.

Hermans, H. J. M. (2014). Self as a society of I-positions: A dialogical approach to counseling. *Journal of Humanistic Counseling, 53,* 134-159.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41,* 954-969.

Singer, J. A. Blagov, P., Berry, M. & Oust, K. M. (2012). Self-defining memories, scripts, and the life story: Narrative identity in personality and psychotherapy. *Journal of Personality, 81,* 569-582.

Spinelli, E. (2015). *Practicing existential therapy: The relational world.* London: Sage.

VC1: The development of writing, spelling and other literacy skills in children and adults

I am interested in topics around the development of children's and adult's writing skills. These can vary from studying the development of handwriting and spelling through to the understanding of what motivates undergraduate students to write or analysing the eye movements of poor spellers when writing. The area is very broad and my approach to research in this area is developmental/cognitive in scope. The topics chosen can involve all sorts of participants. However, the more specialised participant groups such as those with dyslexia etc would be better suited to those who already have ready access to groups for testing. Some of my recent publications are below and can be accessed via the library web site. If you choose this option we can discuss your interests in writing and tailor a project to suit.

Limpo, T., Alves, R, & Connelly, V. (2017). Examining the Transcription-Writing Link: Effects of Handwriting Fluency and Spelling Accuracy on Writing Performance via Planning and Translating in Middle Grades. Learning and Individual Differences, 53, 26-36.
Sumner, E., Connelly, V. & Barnett, A. (2016). The Influence of Spelling Ability on Vocabulary Choices when Writing for Children with Dyslexia. Journal of Learning Disabilities. 49(3), 293-304.
Dockrell, J.E., Connelly, V., Walter, K. & Critten, S. (2015). Assessing children's writing products: The role of curriculum based measures. British Educational Research Journal. 41(4), 575-595.
Connelly, V., Dockrell, J.E.. Walter, K., & Critten, S. (2012). Predicting the Quality of Composition and Written Language Bursts from Oral Language, Spelling and Handwriting Skills in Children with and without Specific Language Impairment. *Written Communication*. . 29,278-302.

Projects supervised by Dr Emma Davies - ED

ED 1 Theory and Health Behaviour : Alcohol
ED : Theory and Environmental Behaviours

My research interests are in the area of health psychology, specifically about developing and testing interventions to change health behaviours. Much of my own research has been conducted on alcohol use and misuse, and developing digital interventions.

Projects supervised by me will have a strong basis in theory. I have used the Prototype Willingness Model and Theory of Planned Behaviour to explore health cognitions. Interventions that are based on theory tend to be more effective than those not based on theory. However, there is also a longstanding debate about the usefulness of theories and whether they are able to adequately capture the complexity of health behaviour.

If you can come up with something exciting and novel related to alcohol, then I would be very happy to hear your ideas.

This year I am interested in exploring behaviours related to the environment. How do we make decisions about what individual actions to take in order to act in pro-environmental ways? Can we apply theories such as the Prototype Willingness Model to understand this behaviour?

Indicative references

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40*, 471-499.

Davies, E. L., Law, C., Hennelly, S. E., & Winstock, A. R. (2017). Acceptability of targeting social embarrassment in a digital intervention to reduce student alcohol consumption: A qualitative think aloud study. *DIGITAL HEALTH, 3*, 2055207617733405. doi:10.1177/2055207617733405

Davies, E. L., Lewis, E.-B. C., & Hennelly, S. E. (2018). "I am quite mellow but I wouldn't say everyone else is": how UK students compare their drinking behaviour to their peers'. *Substance Use and Misuse*. doi:https://doi.org/10.1080/10826084.2017.1416403

Davies, E. L., Martin, J., & Foxcroft, D. R. (2016). Age differences in alcohol prototype perceptions and willingness to drink in UK adolescents. *Psychology, Health & Medicine, 21*(3), 317-329. doi:10.1080/13548506.2015.1051556

Gerrard, M., Gibbons, F. X., Reis-Bergan, M., Trudeau, L., Vande Lune, L. S., & Buunk, B. (2002). Inhibitory effects of drinker and nondrinker prototypes on adolescent alcohol consumption. *Health Psychology, 21*(6), 601-609. doi: 10.1037//0278-6133.21.6.601

Shepperd, J. A., Klein, W. M. P., Waters, E. A., & Weinstein, N. D. (2013). Taking Stock of Unrealistic Optimism. *Perspectives on psychological science : a journal of the Association for Psychological Science, 8*(4), 395-411. doi:10.1177/1745691613485247

Sniehotta, F. F., Presseau, J., & Araujo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review, 8*(1), 1-7. doi: 10.1080/17437199.2013.869710

Todd, J., Kothe, E., Mullan, B., & Monds, L. (2014). Reasoned versus reactive prediction of behaviour: a meta-analysis of the prototype willingness model. *Health Psychology Review*, 1-24. doi: 10.1080/17437199.2014.922895

van Lettow, B., de Vries, H., Burdorf, A., & van Empelen, P. (2014). Quantifying the strength of the associations of prototype perceptions with behaviour, behavioural willingness and intentions: a meta-analysis. *Health Psychology Review*, 1-19. doi: 10.1080/17437199.2014.941997

Projects supervised by Professor David Foxcroft ~ DF

DF1: Reproducibility in Psychology, Methods of research: Quantitative studies

I'm interested in scientific research methods in Psychology, especially how study biases and design weaknesses can lead to mistaken conclusions. One recent development that has really focused attention on poor research in Psychology is the Reproducibility Project, and a really interesting spin-off from this project is The Collaborative Replication and Education Project (CREP). The CREP is a crowdsourced replication project for undergraduate researchers. Several studies are available that are both highly cited and feasible for undergraduates to complete. Contributors who meet open science reporting guidelines receive a CREP Research Certificate and when there are enough samples, contributors are encouraged to collaborate on a research paper.

Ioannidis JPA (2005) Why most published research findings are false. PLoS Med 2: 124.JPA Ioannidis2005Why most published research findings are false.PLoS Med2124

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science, 349*(6251), aac4716. Doi: 10.1126/science.aac4716

Projects supervised by Dr Nayeli Gonzalez-Gomez ~NGG

My research focuses on understanding the roots of language acquisition, by exploring speech perception in infancy. I'm interested on infants' capacity to learn the properties of their native language, the mechanisms by which these native properties are acquired and how prior knowledge about these properties supports later lexical acquisition, such as word segmentation and early word learning. I would welcome any projects based on this research area, including both monolingual and bilingual infants and also adults. Below are some ideas.

NGG1: Linking early phonological acquisitions and later lexical acquisition

Many studies have shown that during the first year of life, infants start learning the prosodic, phonetic and phonotactic properties of their native language. In parallel infants start associating sound sequences with meaning representations, (learning words). However, the question of how these two processes interact remains largely unknown. A project in this area will explore whether (and if, when) early phonological acquisitions have an impact on infants' word learning and word segmentation.

Graf Estes, K., Edwards, J., & Saffran, J. R. (2011). Phonotactic constraints on infant word learning. Infancy, 16, 180–197.

Hollich, G., Jusczyk, P., & Luce, P. (2002). Lexical Neighborhood Effects in 17-Month-Old Word Learning. Proceedings of the 26th Annual Boston University Conference on Language Development (pp. 314-323). Boston, MA: Cascadilla Press.

NGG2: **Learning the meaning of abstract words**

Different studies have shown that by 6 months of age infants are already able to understand different concrete words that are very frequent in their environment such as mummy, daddy, food-related words… However very little is known about when and how infants start acquiring abstract words, that is words that do not refer to something concrete, for example WH question words, such as who and what, (who referring to a category named people and what to a category named objects). A project in this area will explore when during development infants are able to understand abstract words.

Bergelson, E. & Swingley, D. (2013). The acquisition of abstract words by young infants. Cognition, 127, 391-397.

Bergelson, E. & Swingley, D. (2012). At 6 to 9 months human infants know the meanings of many common nouns. Proceedings of the National Academy of Science USA, 109, 3253–3258.

Tincoff, R. & Jusczyk, P.W. (1999). Some beginnings of word comprehension in 6-month-olds. Psychological Science, 10, 172–175.

Projects supervised by Dr Lisa Hinkley ~ LH

I am interested in supervising projects that relate to my research in the area of prospective memory. I am also willing to **consider** any project within the field of memory. Some suggested areas of research include:

LH1:   Prospective memory

Prospective memory can be defined as remembering to remember (Winograd, 1988). It differs from retrospective memory, where passed actions, events, or knowledge are remembered. Hence, remembering *that* I called my mother yesterday is a form of **retrospective memory**, but remembering *to* call my mother tomorrow is a form of **prospective memory**. Prospective memory makes different demands on the cognitive system, not least because following the formation of an intention to act in the future people usually engage in other activities. Furthermore, with retrospective memory participants are explicitly asked to recall or recognise information, but with prospective memory there is no direct prompt for recall (unless you add a prompt in your diary/PDA). The major difficulty in prospective remembering is that people need to remember *that* something needs to be done. Prospective memory ability does not necessarily correlate with retrospective memory ability; research has shown that people with good retrospective memory may do poorly at a prospective memory task. Baddeley (1990) found that subjects who did well on a test for recall of lists of words (retrospective memory) did poorly at remembering to take pills at specified times (prospective memory). This kind of research suggests that the two kinds of memory are functionally distinct. This project will involve a literature review followed by an empirical study which examines some aspect of prospective memory.

Possible areas for research include:

Role of Monitoring: The preparatory attentional and memory processes theory (PAM) of prospective memory assumes that PM retrieval requires resource-demanding preparatory attentional processes and hence that the requirement to perform a PM intention will always come at a cost to ongoing task performance. Many studies have provided findings that are consistent with this theory, in that they have shown slowed response times on the ongoing task when a PM task is added. However this does not mean that costs are inevitable. The multiprocess theory assumes that retrieval can also occur spontaneously (and hence at no cost to the performance of the ongoing task). There is now a big literature exploring the role of monitoring with most studies looking to examine under what conditions monitoring may not be required, in order to negate the claims of PAM theory that monitoring is always required. If you choose this topic area you will be required to review the literature regarding the role of monitoring in PM and then to design (under supervision) and carry out a study which test a hypothesis regarding the conditions under which completion of a PM intention may or may not require resource-consuming attentional processes.

Effects of dividing attention on PM performance: Marsh & Hicks (1998) found that increasing cognitive demands on the ongoing task by adding a concurrent task (i.e. dividing attention) sometimes interferes with PM and sometimes doesn't. In particular, they found that dividing attention with tasks that engage the Central Executive lowers PM performance but dividing attention with tasks that mainly occupy the Articulatory Loop or VSSP did not. In this experiment they used a non-focal target (press a key when a member of the target group 'fruit' was presented), and the implication is that the CE is needed for monitoring the PM non-focal target. Results with focal targets are less clear cut. This study will involve varying the degree of focal processing (for example, using a specific word as a target (focal) vs. exemplars of a category (non-focal)) whilst also varying the demands of the ongoing

task. It is hypothesised that the negative effects of dividing attention will be more pronounced with non-focal cues, as target monitoring is thought to be higher for non-focal targets (according to Multi-Process theory)

Length of Retrieval Interval - PM strategies are likely to vary depending on the length of the likely retention interval. Some studies have examined the effects of a delay between the retrieval of the intention and the opportunity to perform the intended action whilst others have examined the effects of a delay between the formation of the intention and the opportunity to perform it. The classical forgetting curve found in retrospective memory does not seem to apply to PM. Some researchers have found an effect over a three minute delay whilst others have found no difference between a 15 and 30 minute interval, whilst others have found better retention over a longer delay. However, we may expect the effects of delay to be dependent upon the nature of the task. For example, it may be that there may be a detrimental effect of delay when monitoring is required but not when retrieval is spontaneous (e.g. Einstein et al (2005). This topic will involve conducting a literature review to examine the effects of delay on PM performance and then designing a study (under supervision) to test a hypothesis regarding the effect of delay on PM performance.

Working Memory & Prospective Memory - WM measures are thought to assess an individual's ability to maintain activation of a representation in the face of distraction (e.g. Engle, Tuholski & Conway 1999), their ability to maintain an integrated representation of the current task concerns (Kimberg & Farah, 1993) and more generally, their resources available for processing and storing current information (Baddeley 1986). If monitoring is always required for PM retrieval one would expect to find correlations between WM capacity and PM, as people with higher WM capacity have the resources required to monitor whilst simultaneously performing the ongoing task. According to multi-process theory this correlation should be limited to task conditions that encourage monitoring (e.g. where cues are non-focal) but not when they don't (e.g. focal). Brewer, Knight, Marsh and Unsworth (2010) found an interaction, such that participants with high and low working memory performed equally well on a focal task, whereas the participants with high working memory performed significantly better on the nonfocal task. This finding would seem to provide evidence that controlled attention is only required with a non-focal PM cue, and hence supports multi-process theory. However, this is just one study and further research is required to examine how WM capacity may affect PM performance and under what conditions.

Processing of ongoing targets – In a typical laboratory test of prospective memory, participants are required to perform a particular action if a PM target is detected during an ongoing cognitive task. For example, participants may be given a series of words to memorise as PM targets and a particular action to perform if the targets are detected during performance of an ongoing task (e.g. a Lexical Decision Task). There is some evidence that there may be differential processing of stimuli in the ongoing task, for example there is some evidence that non-word LDT stimuli may be dismissed more quickly than words, and it is hypothesised that this is because it is easier to dismiss them as non-PM targets. However, little research has been carried out to examine the level of processing of LDT words, (e.g. how quickly are participants able to dismiss LDT words as non-PM targets and what factors affect this?, Is interference specific to stimuli that are relevant to the intention or is it more

general in its influence.Would the fact that a LDT word is semantically related to a PM target slow down a participants' rate of responding. If so, what other factors affect the processing of these stimuli?) This project would involve a literature review followed by the design (under supervision) and carrying out of an experiment which tests a hypothesis regarding the processing of ongoing targets in a PM task.

Emotion and PM – The emotionally enhanced memory effect is robust across studies of retrospective memory, with heightened recall for items with emotional content (e.g., words like 'murder') relative to neutral items (e.g., words like 'envelope'). Only a handful of studies have examined the influence of emotion on prospective memory (PM), with mixed results. In some cases emotion enhances PM, and in others it impairs PM. Interpretation of these findings is clouded by methodological differences. Clark-Foos, Brewer, Marsh, Meeks & Cook (2009) found that positively valanced event-based cues are detected better than negative ones, and that both are detected less frequently than cues given in a neutral context, suggesting that both positive and negative valence interferes with completing one's intentions. Further research is needed to examine the parameters surrounding this effect.

References

Kliegel, M, McDaniel, M.A. & Einstein, G.O (2008) Prospective Memory – Cognitive, Neuroscience, Developmental and Applied Perspectives. LEA.

McDaniel M.A. & Einstein, G.O. (2007) Prospective Memory: An Overview and Synthesis of an Emerging Field. Sage.

Brandimonte M, Einstein GO, McDaniel MA (1996) Prospective memory: theory and applications. *Mahwah, NJ: Erlbaum*

Marsh RL & Hicks JL (1998) Event-based prospective memory and executive control of working memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 24:336-349

Clark-Foos A., Brewer, G.A., Marsh, R.L., Meeks, J.T and Cook, G.I. (2009) The valence of event based PM cues or the context in which they occur affects their detection. American Journal of Psychology, 122 (1), 89-97.

May, C.O, Owens M, & Einstein, G.O. (2012) The impact of emotion on prospective memory and monitoring: No pain, big gain; Psychonomic Bulletin & Review, Vol 19(6), 1165-1171.

Cohen, A, Jaudas, A. H, Sobin, E, Gollwitzer, Y & Peter M (2012) The specificity of prospective memory costs. Memory, Vol 20(8), 848-864.

Harrison, T. L & Einstein, G. O (2010) Prospective memory: Are preparatory attentional processes necessary for a single focal cue? Memory & Cognition, 38 (7), 860-867

Cohen, A.-L., Jaudas, A., & Gollwitzer, P. M. (2008). Number of cues influence the cost of remembering to remember. Memory & Cognition, 36, 149-156.

Einstein, G. O., McDaniel, M. A., Thomas, R., Mayfield, S., Shank, H., Morrisette, N., & Breneiser, J. (2005). Multiple processes in prospective memory retrieval: Factors determining monitoring versus spontaneous retrieval. Journal of Experimental Psychology:General, 134, 327-342.

Marsh, R. L., Hancock, T. W., & Hicks, J. L. (2002). The demands of an ongoing activity influence the success of event-based prospective memory. Psychonomic Bulletin & Review, 9, 604-610.

Scullin, M. K., McDaniel, M. A., & Einstein, G. O. (2010). Control of cost in prospective memory: Evidence for spontaneous retrieval processes. Journal of Experimental Psychology: Learning, Memory, & Cognition, 36, 190-203.

Scullin, M. K., McDaniel, M. A., Shelton, J. T., & Lee, J. H. (2010). Focal/nonfocal cue effects in prospective memory: Monitoring difficulty or different retrieval processes. Journal of Experimental Psychology:Learning, Memory, & Cognition, 36, 736-749.

Altgassen, M., Phillips, L. H., Henry, J. D., Rendell, P. G., & Kliegel, M. (2010). Emotional target cues eliminate age differences in prospective memory. Quarterly Journal of Experimental Psychology, 63, 1057–1064.

Rendell, P. G., Phillips, L. H., Henry, J. D., Brumby-Rendell, T., Garcia, X. P., Altgassen, M., & Kliegel, M. (2011). Prospective memory, emotional valence and ageing. Cognition and Emotion, 25, 916–925.

Rummel, J., Hepp, J., Klein, S. A., & Silberleitner, N. (2012). Affective state and event-based prospective memory. Cognition & Emotion, 26, 351–361.

Einstein, G. O., & McDaniel, M. A. (2005). Prospective memory: Multiple retrieval processes. Current Directions in Psychological Science, 14, 286–290.

Loft, S., & Yeo, G. (2007). An investigation into the resource require-ments of event-based prospective memory. Memory and Cognition, 35, 263–274.

Brewer, G.A., Knight, J.B, Marsh, R.L & Unsworth, N (2010) Individual differences in event-based prospective memory: Evidence for multiple processes supporting cue detection. Memory & Cognition, 38 (3), 304-311

Projects supervised by Dr Ben Kenward ~ BK

BK1: The psychology of ecological and climate breakdown

For decades governments have known about ecological and climate breakdown yet they do little about it. That humanity is sleep-walking towards catastrophe is simply mainstream science. You probably already know this so references are superfluous but if not please Google it. The important open questions are: why do we not act, and what can be done to cause us to act? These questions are on the desk of the psychologist.

All the projects I supervise this year will attempt to contribute answers to these questions. Dependent variables will be directly relevant to this aim, for example measures of behavioural intentions or (even better) behaviours themselves that will assist in averting the catastrophe. Designs will ideally be experimental rather than correlational so that clear conclusions about potential interventions can be reached. Note that this does not necessarily rule out the use of questionnaires, but direct measures of behaviours are encouraged.

Examples of specific topics might include:

- How does temporal discounting contribute to the problem and how can this be addressed? (Temporal discounting is the tendency to assign less importance to benefits or disadvantages that are further in the future.)
- How can we tackle implicatory denial? (Implicatory denial is the capacity to intellectually understand the nature of the problems but act as if they don't exist.)
- Are activities like recycling counterproductive because they give individuals the false impression that they have taken adequate responsibility?

- What are the most effective communication tools for promoting positive environmental behaviour? For example, is fear a useful motivator?
- What are the factors that motivate people to engage in environmental activism - for example is it motivated by feelings of self-efficacy?
- What is the public perception of environmental activism?
- How can we tailor messages to be effective to different audiences?

Here is a list of relevant literature:

Adams, M. (2014). Inaction and environmental crisis: Narrative, defence mechanisms and the social organisation of denial. Psychoanalysis, Culture & Society, 19(1), 52-71. doi:10.1057/pcs.2013.21

Cialdini, R. B. (2007). Descriptive social norms as underappreciated sources of social control. Psychometrika, 72(2), 263-268.

Feinberg, M., & Willer, R. (2013). The moral roots of environmental attitudes. Psychological Science, 24(1), 56-62.

Fielding, K. S., & Hornsey, M. J. (2016). A Social Identity Analysis of Climate Change and Environmental Attitudes and Behaviors: Insights and Opportunities. Frontiers in psychology, 7, 121.

Pavalache-Ilie, M., & Unianu, E. M. (2012). Locus of control and the pro-environmental attitudes. Procedia-Social and Behavioral Sciences, 33, 198-202.

Reser, J. P., & Bradley, G. L. (2017). Fear Appeals in Climate Change Communication: Oxford University Press.

Van Lange, P., Joireman, J., & Milinski, M. (2018). Climate Change: What Psychology Can Offer in Terms of Insights and Solutions. Current directions in psychological science, 27(4), 269-274.

Projects supervised by Dr Sanjay Kumar ~ SK

I am interested in supervising projects within the broad area of how perception of objects leads to activation of associated action and how these associated actions are modulated in different environmental/emotional context. Furthermore, research projects will explore how holding action information in working memory affects guidance of attention. Research projects could be undertaken with normal healthy individuals, ageing or clinical populations with compromised motor system involvement. I am also happy to discuss research topics in clinical psychology areas. Group based projects can be undertaken by a group of students with similar interests (either in cognitive psychology or clinical psychology based projects). NB: Students who work with vulnerable groups will need to have a full DBS check.

Kumar, S., Riddoch, M. J., & Humphreys, G. W. (2013). Mu rhythm desynchronization reveals motoric influences of hand action on object recognition. *Frontiers in Human Neuroscience*, doi: 10.3389/fnhum.2013.00066

Kumar, S., Yoon, E. Y., & Glyn W Humphreys. (2012). Perceptual and motor based responses to actions on objects. *Experimental Brain Research, 220*, 153-164.

Humphreys, G. W., Yoon, E. Y., Kumar, S., Lestou, V., Kitadono, K., Roberst, K. L., & Riddoch. M. J. (2010). The Interaction of attention and action: from seeing action to acting on perception. *British Journal of Psychology, 101*, 185-206.

Olivers, C. L.N., Peters, J., Houtkamp, R., & Roelfsema, P. R. (2011). Different states in visual working memory: when it guide attention and when it does not. *Trends in Cognitive Sciences, 15*, 327-334.

Projects supervised by Dr John Lawson ~ JL

JL1: The nature of sex differences in aspects of cognition and/ or behaviour.
Much of the research that I have undertaken in the past has led me to have an interest in the area of sex/gender differences. This year I am planning to offer dissertation supervision in a similar area but I am looking for students to make an active contribution in terms of research ideas and design. Any student choosing this option should have a reasonably well thought out project / study already in mind regarding some aspect of sex difference.

JL2: The 'Dark Triad' model of human personality
The second area being offered relates to a relatively new area of study within psychology; the Dark Triad. The Dark Triad is a postulated concept that encompasses three traits; sub-clinical psychopathy, narcissism and Machiavellianism. Current research is exploring how these traits manifest among the general population and what factors might shape this manifestation. Students choosing this option would contribute to the ongoing development of a new Dark Triad measure and use this to explore group differences within the general population. This may well include issues connected to sex difference or another variable that interests you e.g. one of my previous students explored the relationship between Dark Triad traits and Self Esteem. An area that I am especially interested in at the moment is the Dark Triad and political viewpoints and ideologies. I would recommend that any students with an interest in politics consider such a project.

It would be in students' interests to have completed U24120 Questionnaire if they wish to work in this area.

I've not provided many references - these are just a couple of texts that provide a good 'starting point' if you want an overview.

General texts re sex differences
Halpern D. F. (2012) Sex Differences in Cognitive Abilities, Psychology Press
Kimura D. (2000) Sex and Cognition, Bradford Books

General texts re the 'Dark Triad'
Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The Dark Triad of personality: A 10 year review. Social and Personality Psychology Compass, 7(3), 199-216.
Paulhus, D. L, & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. Journal of Research in Personality, 36, 556–563.

Projects supervised by Dr Adam Lonsdale ~ AL

My research is concerned with the social psychology of music, applying ideas from mainstream social psychology to study music and musical behaviour. In particular, I am interested in the social functions of music and the idea that people might use their musical tastes as a 'badge' of identity and group membership.

I will only consider ideas / research self-devised questions relating to the social psychology of music and musical taste, if they have been extremely well thought out & researched by the student concerned. However, in the absence of any specific proposals, my project students will be expected to conduct projects in one of the four areas listed below.

It would be in students' interests to have completed U24120 Questionnaires Design for Psychology and U24132 Social Psychology.

AL1. Why do people listen to music?

People spend enormous amounts of time and money listening to music, however surprisingly little empirical research has been done to explain why. Students interested in this topic might consider investigating any of the many significant 'gaps' in our understanding of music and the psychological functions it might serve.

Chamorro-Premuzic, T., & Furnham, A. (2007). Personality and music: Can traits explain how people use music in everyday life. *British Journal of Psychology*, *98*, 175 – 185.

Chamorro-Premuzic, T., Swami, V., & Cermakova, B. (2012).Individual differences in music consumption are predicted by uses of music and age rather than emotional intelligence, neuroticism, extraversion or openness. *Psychology of Music*, 40, 28 - 300.

Hargreaves, D.J., & North, A.C. (1999). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music*, *27*, 71 – 83.

Lonsdale, A.J., & North, A.C. (2011). Why do we listen to music? A uses & gratifications analysis. *British Journal of Psychology*, *102*, 108 – 134.

North, A.C., Hargreaves, D.J., & Hargreaves, J.J. (2004). Uses of music in everyday life. *Music Perception*, *22*, 41 – 77.

North, A.C., Hargreaves, D.J., & O'Neill, S.A. (2000). The importance of music to adolescents. *British Journal of Educational Psychology*, *70*, 255 – 272.

Tarrant, M., North, A.C., & Hargreaves, D.J. (2000). English and American adolescents' reasons for listening to music. *Psychology of Music*, *28*, 166– 173.

AL2. Musical taste and in-group favouritism

Musical taste has been argued to function as a social 'badge', used by individuals to symbolically represent their group membership to others. For this reason, it has been suggested that people who share our musical tastes are likely to be regarded as "in-group" members, and as a result subject to in-group favouritism. Initial research findings support these ideas, although further work is needed to explore the possible links between musical

taste, group membership and social identity. Students interested in this topic are invited to investigate these ideas further.

Abrams, D. (2009). Social identity on a national scale: Optimal distinctiveness and young people's self-expression through musical preference. *Group Processes & Intergroup Relations*, *12*, 303 – 317.

Bakagiannis, S., & Tarrant, M. (2006). Can music bring people together? Effects of shared musical preference on intergroup bias in adolescence. *Scandinavian Journal of Psychology*, *47*, 129 - 136.

Brewer, M.B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues*, *55*, 429 – 444.

Brown, R. (2000). Social identity theory: Past achievements, current problems and future challenges. *European Journal of Social Psychology*, *30*, 745 – 778.

Lonsdale, A.J., & North, A.C. (2009). Musical taste and in-group favouritism. *Group Processes & Intergroup Relations*, *12*, 319 - 327.

North, A.C. & Hargreaves, D.J. (1999). Music and adolescent identity. *Music Education Research*, *1*, 75 – 92.

Roccas, S., & Brewer, M.B. (2002). Social identity complexity. *Personality and Social Psychology Review*, *6*, 88 – 106.

Tarrant, M., North, A.C., & Hargreaves, D.J. (2001). Social categorization, self-esteem, and the estimated musical preferences of male adolescents. *Journal of Social Psychology*, *141*, 565–581.

Tekman, H.G., & Hortaçsu, N. (2002). Music and social identity: Stylistic identification as a response to musical style. *International Journal of Psychology*, *37*, 277 – 285.

AL3. Musical omnivores & open-earedness

According to certain theories of musical preference, people should like moderately arousing music of all kinds, regardless of its musical genre. Or, to put it another way, we should all be 'open-eared' and musical 'omnivores'. However, this clearly is not the case; individuals often develop musical tastes for particular musical styles and artists and dislike many others. Sociological analyses of cultural preferences suggest that 'omnivorous' tastes offer high-status, educated individuals a means to distinguish themselves from their lower-status, less educated counterparts, who tend to hold more limited cultural preferences (so-called cultural 'univores'). Students interested in this topic will be invited to explore both the social and the psychological antecedents of this omnivore-univore distinction and why some people seem to be more musically tolerant than others.

Bryson, B. (1996). Anything but heavy metal: Symbolic exclusion and musical tastes. *American Sociological Review*, *61*, 884 – 899.

Hargreaves, D. J. (1982b). The development of aesthetic reactions to music. *Psychology of Music*, Special Issue, 51-54.

Kopiez, R. & Lehmann, M. (2008). The 'open-eared' hypothesis and the development of age-related aesthetic reactions to music in elementary school children. *British Journal of Music Education,* 25 (2), 121-138.

LeBlanc. A., Sims, W. L., Siivola, C. & Obert, M. (1996), Music styles preferences of different age listeners. *Journal of Research in Music Education*, 44 (1), 49-59.

Peterson, R.A. (1992). Understanding audience segmentation: From elite and mass to

omnivore and univore. *Poetics*, *21*, 243 – 258.

Peterson, R.A., & Kern, R.M. (1996). Changing highbrow taste: From snob to omnivore. *American Sociological Review*, *61*, 900 – 907.

Van Eijck, K. (2001). Social differentiation in musical taste patterns. *Social Forces, 79*, 1163 – 1185.

Projects supervised by Morag MacLean ~ MM

My research interests are focused on how we think about ourselves and others, especially in terms of mental and emotional states, and how this relates to behaviour in a variety of domains in childhood and adulthood. People vary considerably in how much they think about other people's thoughts and feelings, how much they talk about this and how much they reflect on the interaction between how they think and feel and how other people think and feel. I am interested in supervising projects that focus on these differences, namely on psychological-mindedness, mind-mindedness or other aspects of mentalisation. Projects in this area need not involve children but I am also happy t supervise work on purely developmental topics.

For projects involving children, access to schools and DBS (Disclosure & Barring Service) checks (previously CRB checks) need to be arranged well in advance.

The following ideas are for consideration, but other well worked out ideas related to my interests and where I could provide appropriate supervision, would also be considered.

MM1: Being 'psychologically-minded'

Being psychologically minded may be a general cognitive style that people bring to all relationships with humans or animals and it may be shown in a variety of ways, most of which are relatively unexplored by existing literature. Measuring psychological mindedness as a cognitive style could involve specific tasks such as describing other people, animals or machines to see if these descriptions are as mental-state related as descriptions of close family members or autobiographical memories. Other methods of addressing psychological mindedness could include sampling everyday discourse in people's reported solutions to hypothetical social problems or developing a questionnaire measure of psychological mindedness that captures introspection and interest in others as well as the self.

Psychological mindedness is thought to be associated with the qualities of a good therapist and has been shown to be associated with a variety of career interests. How it impacts on thinking about careers, making choices about job applications or simply coping with the challenges of academic study is less well understood. A variety of research questions can be asked, about what factors students take into account when making career choices.

There is also scope for investigations of how psychological mindedness relates to a wide range of characteristics/behaviours such as friendship quality, attachment style in romantic relationships and friendships and fiction reading (other mentalising abilities seem to be enhanced by reading fiction).

Beitel, M., Ferrer, E., & Cecero, J. J. (2005). Psychological mindedness and awareness of self and others. *Journal of Clinical Psychology*, *61*(6), 739-750.*(If you want to look at a measure of psychological mindedness read this)*

Bourne, K., Berry, K., & Jones, L. (2014). The relationships between psychological mindedness, parental bonding and adult attachment. *Psychology and Psychotherapy: Theory, Research and Practice*, *87*(2), 167-177. *(A study of adults)*

Hendrix, E. B. (2015). *" I felt left out because she picked another friend to take my place" : Psychological Mindedness and Belongingness in Children's Narratives* (Doctoral dissertation, Memphis, Tenn.: Rhodes College). *(Skim only - not peer reviewed but an interesting study)*

Kidd, D. C., & Castano, E. (2013). Reading literary fiction improves theory of mind. *Science*, *342*(6156), 377-380. *(The effect is robust and begs to be combined with other individual differences such as psychological mindedness)*

MM2: Autobiographical memory and psychological mindedness/mental state talk

Autobiographical memory is a memory system consisting of episodes recalled from an individual's life, based on a combination of their personal experiences and objects, people and events experienced at particular time and place and semantic memory. It is assessed by means of interview or via a questionnaire requiring responses to open-ended questions. My interest in it is in the extent to which these self-defining memories are related to our other characteristics such as our psychological mindedness, spontaneous references to mental states, attachment and coping styles (but not all in the one study!).

A basic reading on autobiographical memory and additional papers on this topic

Fivush, R. (2011). The development of autobiographical memory. *Annual review of psychology*, *62*, 559-582. *(Basic reading for anyone interested in autobiographical memory)*

Grysman, A., & Hudson, J. A. (2013). Gender differences in autobiographical memory: Developmental and methodological considerations. *Developmental Review, 33(3), 239-272. (A good description of methods and issues)*

Nyklíček, I., & Denollet, J. (2009). Development and evaluation of the Balanced Index of Psychological Mindedness (BIPM). *Psychological Assessment, 21*(1), 32. *(If you want to look at a measure of psychological mindedness read this)*

Rathbone, C. J., Holmes, E. A., Murphy, S. E., & Ellis, J. A. (2015). Autobiographical memory and well-being in aging the central role of semantic self-images. *Consciousness and Cognition, 33*, 422-431. *(This paper by Clare Rathbone (a lecturer in our department) provides a clear description of the IAM method of assessing autobiographical memory as well as some very interesting findings)*

MM3: Mind-mindedness/reflective function

Mind-mindedness refers to the tendency to think about and treat people <u>with whom one has close relationships</u> with reference to their emotions and cognitions. As a result it differs from psychological mindedness as it is primarily seen as a function of a specific relationship and not a general personality characteristic. It is also associated with reflective function, a concept much used in psychodynamic therapy. Reflective function is more comprehensive an idea than mind-mindedness as it encompasses attributing thoughts, feelings, intentionality and desires to others as well as recognition of one's own and the interaction between the two. Like mind-mindedness, it is not a personality characteristic but a feature of intimate relationships. *(NB: It is completely different from 'mindfulness' which is a meditation-like mental state in which the individual focuses on the present moment. I do <u>not</u> supervise projects on mindfulness.)*

In parents, mind-mindedness has been measured in terms of parental representations (how they think about their child/partner) as well as by observing interactions between parents and children. Mind-mindedness refers to the extent to which the parent thinks about and treats the child as an individual with a mind rather than as a being with needs that must be satisfied. Meins et al. (2003) developed a relatively simple way of measuring representational mind-mindedness by asking mothers to describe their child and then coding the responses for appropriate mentions of the child's mental and emotional states.

Students interested in working with children and families could develop projects involving parent-child dyads. The investigation of mind-mindedness can be extended to adolescents and their parents or even adults and their close friends and partners. Potential questions include: Does level of mind-mindedness relate to aspects of autobiographical memory? How does mind-mindedness in fathers relate to their relationships with their children? Other more cognitive approaches could involve the relationship between mind-mindedness, autobiographical memory and prosody (i.e. how pauses are related to active processing in response to an autobiographical memory or mind-mindedness interview. This last project idea is of importance as theory proposes high levels of mind-mindedness as being the product of active reflection, but to date this has not been fully tested empirically.

<u>Example publications on mind-mindedness/reflective function</u>

Ha, C., Sharp, C., Ensink, K., Fonagy, P., & Cirino, P. (2013). The measurement of reflective function in adolescents with and without borderline traits. *Journal of adolescence,* 36(6), 1215-1223.*(A good paper describing reflective function and a questionnaire-based measure of it)*

Illingworth, G., MacLean, M., & Wiggs, L. (2015). Maternal mind-mindedness: stability over time and consistency across relationships.*European Journal of Developmental Psychology*, 1-16. *(Useful for a description of methods)*

Lecce, S., Ceccato, I., & Cavallini, E. (2018). Theory of mind, mental state talk and social relationships in aging: The case of friendship. *Aging & mental health*, 1-8. *(A partial replication is worth thinking about)*

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*. *(The most recent overall review)*

Rollo, D., Longobardi, E., Spataro, P., & Sulla, F. (2017). The Construction of Self in Relationships Narratives and References to Mental States during Picture-Book Reading Interactions between Mothers and Children. *Frontiers in psychology*, 8, 2060.*(A lovely example of a repliable observational study - a partial replication with additional components would be interesting)*

The topics above could be addressed individually or by a group of students working with the same participants using questionnaires, structured interviews and observational methods.

Little or no work has been carried out in non-Western cultures or even in the rest of Europe where different cultural expectations might influence the meaning and correlates of mind-mindedness.

I am happy to consider other related ideas / research questions if they have been well thought out by the student concerned.

Projects supervised by Dr Michael Pilling

My main research interest is in visual cognition, particularly visual attention and visual conscious perception. I have a number of active and ongoing research projects which students can be involved in. These are on a fairly diverse range of topics. These include (but not exhaustively): visual masking and conscious awareness of briefly presented stimuli; attention and Visual Short Term Memory (VSTM); the role of attention in change detection & the role of colour in memory for scenes.

MP1. Visual attention and awareness

Only a small proportion of the visual information that is registered in the retinal image actually reaches conscious awareness. What are the circumstances necessary for us to be aware of a visual stimulus? What role do different forms of attention play in this process? There has been a long interest in these questions within the field of Cognitive Psychology and a number of paradigms have been developed to explore the limiting conditions for conscious perception (e.g. Visual masking paradigms, the attentional blink paradigm, the repetition blindness paradigm, the change blindness paradigm, the inattentional blindness paradigm).

Enns & DiLollo (2002). What's new in visual masking? *Trends in Cognitive Sciences, 9*, 345–352.

Lamme, V.A. (2003) Why visual attention and awareness are different. *Trends in Cognitive Science.* 7, 12–18

Wolfe, J. et al. (2005). Why don't we see changes? The role of attentional bottlenecks and limited visual memory. *Visual cognition, 14*, 749-780

Pilling, M. & Gellatly, A. (2011). Visual awareness of objects and their colour. *Attention, Perception & Psychophysics, 73,* 2026-43.

MP2. Representation of visual objects in visual cognition

Much work has generally assumed that spatial location is the main unit of analysis of visual attention (e.g. Posner 1980). Some work however has indicated that attention can sometimes operate in a manner in which the unit of analysis becomes focused on objects rather than spatial locations per se (e.g. Duncan, 1984), thus where two objects overlap in space attention may only be focused on one of them although they occupy essentially the same spatial location. Similar claims regarding object-based representations have been made in the context of visual short term memory (VSTM). Here it is claimed that visual memory is limited by the number of objects it can hold (rather than, say, the number of features or spatial locations). However these processes are still not fully understood and further work is still needed to understand object based processes in visual cognition.

Scholl, B. (2001). Object based attention: the state of the art. Cognition, 80, 1-46.

Flaumbaum J. & Scholl, B.J. (2006). A temporal same-object advantage in the tunnel effect: facilitated change detection for persisting objects*. J Exp Psychol Hum Percept Perform.* 2006 Aug;32(4):840-53.

Chen. (2012). Object-based attention: a tutorial review. *Attention, Perception & Psychophysics.* 74,784-802

Projects supervised by Dr Clare Rathbone ~ CR

My research focuses on autobiographical memory – memory for life events – and the way autobiographical memories are organised at times of encoding and retrieval. I am particularly interested in examining the role of the self in this organisation – by exploring the distributions of memories around periods of transition (Project 1) and by measuring the speed with which memories or facts about the self come to mind (Project 2).

CR1: Life transitions and autobiographical memory

When we look back across the lifespan our memories are organised in various different ways. We remember more events from young adulthood than other periods of life (the reminiscence bump) and memories for lifetime periods (e.g., being at a particular school) are used to index more specific sets of memories (e.g., exam results day). This project will explore how memories are organised with reference to major life transitions. The transition in question could be the start of university, a new relationship, moving to a new country, or any other event that involves a long-term and significant change for the self. Students will be expected to develop a research question around a specific transition and to use autobiographical memory tasks to examine the impact of this transition on memory.

Brown, N. R. (2016). Transition Theory: A minimalist perspective on the organization of autobiographical memory. *Journal of Applied Research in Memory and Cognition, 5*(2), 128-134.

Rathbone, C.J., Moulin, C.J.A., & Conway, M.A. (2008). Self-Centred Memories: the Reminiscence bump and the Self. *Memory & Cognition, 36*(8), 1403-14.

Thomsen, D.K. & Berntsen, D. (2005). The end point effect in autobiographical memory – more than a calendar is needed. *Memory, 13*, 846-861.

CR2: Self-image fluency

Fluency tasks measure the ease with which items are generated in a given time period. For example, a letter fluency task might measure how many words starting with the letter F a person can generate in one minute. Similarly, autobiographical fluency tasks involve the retrieval of as many memories as possible (e.g., Rathbone & Moulin, 2014). This project will use a fluency paradigm (i.e. generating as many items as possible in a set time period) to explore the organisation of the self. Self-images are 'I am' statements that describe the self concept (e.g., I am a student, I am optimistic). Recent work suggests that autobiographical retrieval actives the self, leading to higher self-image fluency (Charlesworth et al., 2016). A project on this topic will aim to develop this line of work by exploring the features that lead to heightened self-image fluency.

Charlesworth, L.A., Allen, R.J., Havelka, J., & Moulin, C.J.A. (2016). Who am I? Autobiographical retrieval improves access to self-concepts. *Memory, 24*(8), 1033-1041.

Rathbone, C.J., & Moulin, C.J.A. (2014). Measuring autobiographical fluency in the self-memory system. *Quarterly Journal of Experimental Psychology, 67*(9),1661-1667.

Projects supervised by Dr Mary Sissons Joshi ~ MSJ

MSJ1: Health Attitudes and Behaviour

Much has been written on the poor health habits of many members of the UK population – including such issues as obesity, alcohol intake, and cigarette smoking. Theory at the interface of social and health psychology suggests that lack of behaviour change relates to a variety of variables including knowledge, procrastination, unrealistic optimism and risk assessment. Students wishing to do a project in this area will be advised to apply a model from health psychology (such as The Theory of Planned Behaviour) and conduct a questionnaire study in one specific health area of their choice.

General background reading
Taylor, S. (2014) *Health Psychology.* New York: McGraw Hill (9th or earlier editions).
House of Lords (2011) *Behaviour Change.* Report of Science & Technology Select Committee,http://www.publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/179.pdf

Examples of some specific areas (policy issues + psychology research articles)

Public Health England (2013) *Obesity and the environment: increasing physical activity and active travel.*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/256796/Briefing_Obesity_and_active_travel_final.pdf

Stok, F.M., De Vet, E., Wardle, J. et al (2014) Navigating the obesogenic environment: How psychological sensitivity to the food environment and self-regulatory competence are associated with adolescent unhealthy snacking. *Eating Behaviors, 17,* 19-22. http://selfregulationlab.nl/wp-content/uploads/2012/04/Stok-et-al.-20151.pdf

Poobalan, A.S., Aucott, L.S., Clarke, A., & Smith, W.C.S. (2012) Physical activity, attitudes, intentions and behaviour among 18-25 year olds: A mixed methods study. *BMC Public Health, 12,* 640. http://www.biomedcentral.com/1471-2458/12/640

HM Government (2012) *The Government's Alcohol Strategy.* Norwich: The Stationery Office.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224075/alcohol-strategy.pdf

Atwell, K., Abraham, C., & Duka, T. (2011) A parsimonious, integrative model of key psychological correlates of UK university students' alcohol consumption. *Alcohol & Alcoholism, 46(3),* 253-60. (Available in Brookes library)

Jamison, J. & Myers, L.B. (2008) Peer group and price influence student drinking along with planned behaviour. *Alcohol & Alcoholism, 43(4),* 492-497.
http://alcalc.oxfordjournals.org/content/43/4/492

HM Government (2011) *Healthy Lives, Healthy People: A Tobacco Control Plan for England.* London: Department of Health

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213757/dh_124960.pdf

Hammond, D., Fong, G.T., McDonald, P., Brown, S.K., Cameron, R. (2004). Graphic Canadian cigarette warning labels and adverse outcomes: Evidence from Canadian smokers. *American Journal of Public Health, 94(8)*, 1442-1445.
http://www.who.int/fctc/guidelines/ArtElevenHammondEleven.pdf

Slovic, P. (1998) Do adolescent smokers know the risks? *Duke Law Journal, 47,* 1133-1141
http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1032&context=dlj

Projects supervised by Dr Nichola Stuart - NS

I am interested in language and literacy development and in particular in the acquisition of syntactic and semantic knowledge.   Three example projects are briefly outlined below but I am willing to consider other language/linguistic related ideas.

Please note that students wanting to work with children will need to have Disclosure and Barring Service (DBS) clearance, experience of working with children and contacts/access to schools to allow testing.

NS1: What is the impact of increased use of technological devices on language use and understanding?

Over the last twenty years or so we have seen an increase in the use of technological devices such as mobile phones and tablets that have led to changes in the way we communicate and use language. The use of messaging in particular has led to abbreviated form of writing together with the use of symbols to replace words. Students could investigate differences in use and understanding of textisms and/or emojis with younger and older age groups and the impact on language and literacy skills.

Wood, C., Kemp, N. & Waldron, S. (2014). Exploring the longitudinal relationships between the use of grammar in text messaging and performance on grammatical tasks. *British Journal of Developmental Psychology*. 32, 4, 415–429

NS2: What is the impact of stigmatising language on attitudes to mental health conditions

Individuals with mental health conditions can suffer stigmatisation due to the language used to describe their condition, symptoms, and treatment. The use of stigmatising language can lead to further difficulties for individuals affected and a reluctance to seek help. Past research has found continued the use of stigmatising language affects attitudes to particular mental health disorders, by both health professionals and the general public.

Students could investigate through the use of vignettes the impact that stigmatising language can have to attitudes towards mental health conditions.

Hwang, J.D. & Hollingshead, K. (2016) Crazy, mad, nutters: the language of mental health. In *Proceedings of the 3rd Workshop on Computational Linguistics and Clinical Psychology: From Linguistic Signal to Clinical Reality* (eds Hollingshead, K, Ungar, L): 52–62. Association for Computational Linguistics.

NS3: How do we understand words with multiple meanings?

Many words in English have multiple meanings such as *bark* and *bug*. Words like *bark* and *bug* which have multiple meanings are called homophones and they differ from polysemous words which have a different but related meanings for e.g. *cup* and *chair*. However some word such as *bank* can be both. Ambiguous words occur far more frequently than we realise and we are so good at figuring out the meaning that we don't even notice the ambiguity.   In disambiguating words, research has shown that the primary source of information used is sentence context (i.e. *the dog barks* vs. *the bark of a tree*). However, listeners also use other sources of information to help them in accessing word meaning, for example the familiarity and frequency of the word's meaning and differences are found between the particular type of ambiguous words. Using either lexical decision tasks or word association tasks and systematically controlling word and non-word stimuli, further investigation of the role of factors such as emotion could be undertaken.

Klepousniotou, E. (2002) The Processing of Lexical Ambiguity: Homonymy and Polysemy in the Mental Lexicon. Brain and Language, 81 (1-3), pp. 205-223.

Blanchette, I., Richards, A. (2003). Anxiety and the interpretation of ambiguous information: beyond the emotion-congruent effect. *Journal of Experimental Psychology: General*, 132 (2), 294-309.

Projects supervised by Dr Luci Wiggs

I am interested in supervising projects concerning sleep and its disorders and especially sleeplessness problems in children. Assessment of sleep would likely be by use of subjective assessment tools such as validated questionnaires or sleep diaries and, unless you have access to special populations, projects would likely use healthy samples from the general population.

LW1: Cognitive aspects of sleeplessness in children and adolescents

Models of adult insomnia stress the multi-directional circular relationships between sleep maladaptive behaviours (e.g. drinking lots of coffee to help keep awake during the day), adverse daytime consequences (e.g. feeling tired and under-performing), pre-sleep cognitive/emotional/physical arousal (e.g. anticipating one is going to be unable to sleep, feeling anxious, increased heart-rate) and dysfunctional cognitions (e.g. worry about sleep loss, unrealistic expectations). Negative cognitive activity (about the sleeplessness or its consequences) are the entry point for the model. Childhood models of sleeplessness are typically behavioural in nature. Cognitive aspects of sleeplessness in children and adolescents have been neglected, with implications for our understanding of the development, maintenance and treatment of sleeplessness in children. Preliminary work suggests that pre-sleep cognitive activity is associated with sleeplessness in children but whether children are concerned about the sleeplessness or its consequences, in the same way as adults, has not been adequately examined. This is important since it has implications for how we conceptualise and attempt to treat the sleeplessness. It is possible that children construe 'staying up late' as a positive state (and only their parents view it as a negative!) or that how they conceptualise this will vary as a function of age. This project would investigate sleep patterns, pre-sleep arousal, beliefs about sleep and concern about arousal/sleeplessness in different age groups of children. Multiple students could work as a group to explore matters in different age groups of children. Access to children/adolescents and their parents would need to be arranged well in advance. Please also note that students wanting to work with children will need to have Disclosure and Barring Service (DBS) clearance.

Ng, A., Dodd, H.F., Gamble, A.L., Hudson, J.L. (2012). The relationship between Parent and Child Dysfunctional Beliefs about Sleep and child sleep. *Journal of Child and Family Studies,* DOI 10.1007/s10826-012-9637-6

Gregory AM, Willis TA, Wiggs L, Harvey AG and the STEPS team. (2008). Pre-sleep arousal and sleep disturbances in children. Sleep, 31, 1745-1747.

Gregory, A. M., Cox, J., Crawford, M. R., Holland, J., & Harvey, A. G. (2009). Dysfunctional beliefs and attitudes about sleep in children. *Journal of Sleep Research,18*, 422–426.

Gregory, A. M., Noone, D. M., Eley, T. C., Harvey, A. G., & The StepsTeam. (2010). Catastrophizing and symptoms of sleep disturbances in children. *Journal of Sleep Research,19*, 175–182.

Harvey AG (2002). A cognitive model of insomnia. Behaviour Research and Therapy, 40, 869-893.

Harvey AG (2005) A cognitive theory and therapy for chronic insomnia. Journal of Cognitive Psychotherapy: An International Quarterly, 19, 41-59.

Stores G (1996) Practitioner review: Assessment and treatment of sleep disorders in children and adolescents. Journal of Child Psychology and Psychiatry, 37, 907-925.

Wiggs L (2009) Behavioural aspects of children's sleep. Archives of Disease in Childhood, 94, 59-62.

Wiggs L (2007) Are children getting enough sleep? Implications for parents. Sociological Research Online, Volume 12, Issue 5, <http://www.socresonline.org.uk/12/5/13.html>.

Wiggs L & Stores G (1995) Children's sleep: How should it be assessed. Association for Child Psychology and Psychiatry Review and Newsletter 17, 153-157.

LW2: Sleep/Sleep Disorders

I am happy to discuss the possibility of supervising other projects within the broad area of sleep and its disorders, (including in relation to special populations to whom you might have access).

Projects supervised by Dr Kate Wilmut ~ KW

My general research area is concerned with how people plan movement and the link between perception and action in both children and adults. I would invite any projects based within this research area, below are some specific ideas all of which could be applied/adapted to either a child or an adult population.

KW1: Motor learning: Motor imagery

There are a number of ways in which we learn movement. Motor imagery (the act of imagining carrying out a movement) is thought to be driven by the exact motor signals and motor representations as actual movements. In fact some evidence suggests that thinking about flexing the hand over a long period improves muscle strength in the hand. In recent years there has been an emergence of evidence to suggest that prolonged motor imagery can promote motor learning as effectively as motor practice. A project in this area could consider the role of task constraints on motor imagery or the usefulness of motor imagery on movement learning.

Allami, N., Paulignan, Y., Brovelli, A. & Boussaoud, D. (2008) Visuo-motor learning with a combination of different rates of motor imagery and physical practice. *Experimental brain research*. 184 105-113

Nyberg, L., Eriksson, J., Larsson, A. & Marklund, P. (2005) Learning by doing versus learning by thinking: Am fMRI study of motor and mental training. Neuropsychologia, 44(5) 711-717

KW2: Motor learning: Consolidation

Previous research has shown that physical practice triggers a series of physiological changes to the brain and that this leads to the long term retention of the skill. This has been termed 'consolidation'. It seems that brain network activated during physical practice are re-activated during reset and/or sleep and this re-activation leads to stabilization and in some case improvement in motor skill. A project in this area could consider consolidation following physical practice, observational learning or motor imagery.

Debarnot, U., Creveaux, T., Collet, C., Doyon, J. & Guillot, A. (2009) Sleep contribution to motor memory consolidation: A motor imagery study. *Sleep,* 32, 1559-1565

Stickgold, R. & Walker, M. P. (2007) Sleep-dependent memory consolidation and reconsolidation. *Sleep Medicine,* 8, 331-343

Trempe, M., Sabourin, M., Rohbanfard, H. & Proteau, L. (2011) Observation learning versus physical practice leads to different consolidation outcomes in a movement timing task. *Experimental Brain Research*, 209(2), 181-192

KW3: Doing two things at once: dual task interference

Do you think you can do two things at once? Many people do, however, evidence suggests a dual task interference effect, where one task always interferes with the other. A lot of research has focused on the nature of this dual task effect using both lab based tasks, i.e. responding to visual stimuli on the screen, and more 'real-world' tasks such as walking and carrying a tray or driving. A project in this area could consider any combination of two tasks how these tasks interact, the effects of task learning on interference and/or the effects of age/experience on dual-task interference.

Lien, M-C., Ruthruff, E. & Johnston, J. C. (2006) Attentional limitations in doing two tasks at once: The search for exceptions. *Current Directions in Psychological Science*, 15(2) 89-93

Harley, C., Wilkie, R.M. & Wann, J.P. (2009) Stepping over obstacles: Attention demands and aging. *Gait & Posture,* 29(3), 428-432.

Nunes, L. & Recarte, M. A. (2002) Cognitive demands of hands-free-phone conversation while driving. *Transportation Research Part F: Traffic Psychology and Behaviour, 5(2) 133-144*

Ruthruff, E., Johnston, J. C. & Selst (2001) Why practice reduces dual-task interference. *Journal of Experimental Psychology: Human Perception and Performance.* 27(1) 3-21

Strayed, D. L. & Johnston, W. A. (2001) Driven to distraction: Dual-task studies of simulated driving and conversing on a cellular telephone. *Psychological Science,* 12(6) 463-466