

THE UNIVERSITY of York

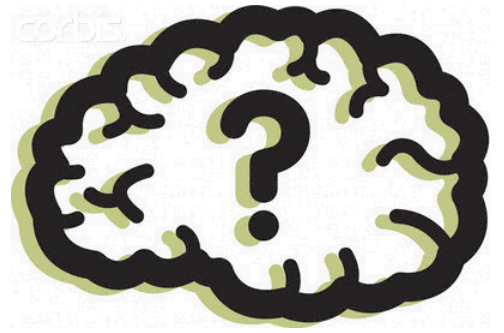
June 2012  
Issue 9

PsychOut

## On Cloud Nine...



**The Science Behind Sleep**



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All references from this issue are also available online.



# Editor's Letter

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*Welcome to another dazzling issue of PsychOut packed with all things Psychology!*

*This term our writers have been exploring issues in the ever-elusive field of sleep. We spend approximately 1/3 of our lifetime asleep and still relatively little is known about what goes on in the brain when we visit the land of nod. Our writers cover a variety of interesting topics in this growing research field, such as how to get the most from your afternoon nap, the struggle of insomniacs and the wonders of lucid dreaming.*

*As it's our last issue as editors we'd like to take the chance to say thank you to everyone who has contributed and supported the magazine this year. We hope you've enjoyed reading it and are excited to see how PsychOut will evolve in issues to come.*

*We'd like to thank this term's writers for contributing their hard work:*

*Jennifer Ashton  
Sarah Bartlett  
Daniel Bennett  
Jack Blake  
Alix Dixon  
Tomas Folke  
Mary Gellert  
Ophelia Groth  
Amy Ulliott  
Laura Porter  
Greta Vilidaite*

*...we'd also like to thank **Marcel Zentner** and **Elaine Tham** for taking part in our interviews, as well as the members of staff who shared their advice and tips on achieving academic success.*

*Happy reading!*

**Francina Clayton** and **Marianne Cezza**  
*PsychOut editors*

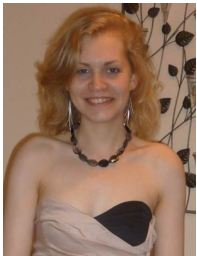
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no previous writing experience is required!**





***This term's feature section is dedicated to understanding the powerful influence that the mind can have on the body.***



## **Insomnia: Why Can't I Sleep?!**

**Laura Porter** finds out why sometimes counting sheep just isn't enough.

Undoubtedly sleep is a part of everyone's daily life...or at least it should be! Sleep is considered central to maintaining our health, mental functioning and ability to cope with stress in adverse situations (Scott, 2012). A common view, which has persisted for centuries, is that the required amount of sleep is eight consecutive hours per night. However, there are multiple factors which may prevent this duration of sleep, including the initial inability to fall asleep which will be the focus of this article.



**Between 10-30% of adults may be suffering from continued sleep disturbance.**

Insomnia is a sleep-related psychological disorder. According to DSM-IV, the following criteria must be met to produce a diagnosis of insomnia:

- \*Difficulty initiating sleep for 3 to 7 nights a week, such that longer than 30 minutes is required to fall asleep
- \*Problems in falling asleep have been present for at least one month (i.e. at least 30 days)
- \*Disturbed sleep results in clinically significant impairment to daily functioning (termed associated daytime fatigue)
- \*Sleep disturbance is not exclusive to other sleep disorders, including narcolepsy, nor to other psychological disorders, such as depression
- \*Problems falling asleep are not the result of direct physiological effects of alcohol or drug use



**"You're suffering from job-stress insomnia.  
Stop counting sheep to fall asleep."**

In many insomniacs, a problem initiating sleep is not the only disorder they suffer. Bixler et al. (1979) reported that around half of insomniacs experience several health problems alongside their sleep issues. Such health problems include heart disease, respiratory difficulties, back pain and diabetes.

The prevalence of insomnia, with regards to DSM-IV's criteria, is approximately 6% of the population. However, higher prevalence estimates of 10 – 30% of the adult population are produced when using less stringent criteria (Roth, 2007). Regardless of the criteria, there is variability in the prevalence due to both age and gender. Ohayon (2002) reports insomnia to be twice as likely to be diagnosed in women compared with men. The prevalence increases with age, with roughly half of over 65-year-olds suffering from insomnia.

Research indicates various risk factors related to disturbed sleep. Akerstedt et al. (2002) found that high work demands, low levels of social support, a lack of exercise and a high BMI significantly increased the risk of problems initiating sleep. Other commonly cited risk factors include being separated, divorced or widowed; having a low standard of education and a low income (Ohayon, 2002).

Interestingly, males and female have

different perceptions regarding what causes their sleep problems. Males are more likely to attribute work-related worries and fatigue, whereas women perceive children, pets and partners at the root of the problem (Groeger, Zijlstra and Dijk, 2004).

Roth (2007) considers insomnia as a hyper-arousal disorder, whereby there is hyper-vigilance during the day, which translates into problems falling asleep at night. The cognitive model provides an account of how insomnia emerges, relating to arousal. Sleep is initially impaired due to continual worry and reflections on daily stresses, which affects the ability to both fall asleep and stay asleep. After prolonged impairments to sleep, the worry shifts from daily stresses to panicking about experiencing a lack of sleep and how your daily activities will suffer. As a result, an individual may encounter further difficulties falling asleep due to this heightened sense of panic and anxiety concerning sleep, thus exacerbating their problems.

Insomniacs will be glad to know that there are numerous ways which appear successful in alleviating difficulties falling asleep. Groeger et al. (2004) reports it is important to develop a healthy night-time routine which could include any of the following effective remedies: having a relaxing bath, reading, drinking herbal tea or listening to music. Above all, the most important thing is to remain relaxed and not to further stress. Perhaps easier said than done!



**Remedies such as listening to music and  
having a bath may help you drop off.**



## Lucid Dreaming: The Best Virtual Reality Experience

With personal experience, **Greta Vilidaite** sheds some light on the power of controlling your own dreams.

Have you ever seen *Inception*? Though it was not the most scientifically accurate film, it was surely a nice introduction to some interesting ideas about dreams. One of them, mutually coexisting with other people in a dream, is only a fantasy (at least at the time being), so we will leave it at that. Another idea has quite solid scientific grounds to stand on and has been referred to as lucid dreaming. Actually, in *Inception* the possibilities of lucid dreaming have been underestimated, and can be much more spectacular and realistic than any 3D Hollywood blockbuster.

But first, let's look at the science underlying dream lucidity. Before the 1950s, lucid dreams were thought of as a philosophical topic and treated sceptically by psychologists of the time. And though most people reported experiencing a lucid dream at least once in their lifetime, the phenomenon was thought to be nonsense. The main concern was the testability of lucid dreaming experiences. The realisation that in-dream eye and finger movements might correspond to movement of physical eyes and fingers led to the first scientific investigation of lucid dreaming by LaBerge (1980). He asked his participants to signal the onset of a lucid dream by moving their eyes or clenching their fists. The results were confirmed by many studies, and so the main focus shifted towards developing techniques of achieving a lucid dream.

There are several notable techniques of inducing lucid dreams to this day and they can be practised by anyone with no special training or equipment. One of the easier techniques is



**Lucid dreaming doesn't require the fictional Pasiv Dream Machine technology used in *Inception*.**

called MILD (Mnemonic Induction of Lucid Dreams). The dreamer simply lies down and constantly repeats to himself that, once in a dream, he will remember that he is dreaming and so will become consciously aware of it. Another, WILD (Wake Initiated Lucid Dream), requires you to lie perfectly still and resist any urge to move whatsoever. Though this technique is valued because of the conscious transition into a dream, it is terribly difficult and unpleasant. There are a few others, but the one that is more commonly used is called WBTB (Wake-Back-To-Bed). Using this technique you have to go to sleep normally after setting your alarm clock for 5am or so. At this time you have to get up, turn your light on if it's dark and do things you normally do during the day. You can take a shower or play a video game. Then, exactly an hour later you go back to sleep and see what happens.



Lucid dreamers differentiate between two kinds of lucid dream beginnings; some start with the dreamer figuring out that he's in a dream. For instance, he sees that instead of ten fingers on his hands he, for some reason, has eleven or eighteen. From then on the dream becomes the dreamer's playground. This is the most common form of lucid dreams. Alternatively the dreamer may fall into a dream without losing his conscious awareness. This might just be one of the strangest and most amazing things you may experience; one minute you're snoozing in your room and the next, the room changes into a castle, a ship or a place you haven't been in for ten years...and you hadn't even realized you'd closed your eyes!

Whichever way the lucid dream began, you are now capable of doing anything. Change the colour of the sky if you like, fly, build a spaceship, become Luke Skywalker. The possibilities are endless, and have attracted much research interest. Usually, experiments are conducted on characters in the dream; it has been noted that their intelligence depends on what kind of people

they are perceived to be by the dreamer, for example, an old wise man will be more intelligent than a child. Overall, dream characters seem to be good at creative tasks like telling stories or making up metaphors, but very bad at logic and maths.

Some people are still quite superstitious and believe that dreams may predict the future or symbolise events or physical entities (for instance, it is thought that seeing faeces in your dreams means you will receive money). Therefore, lucid dreams are considered by certain people to be supernatural experiences. Some even believe that during a lucid dream your soul leaves your body and risks being stolen by other spirits. Fortunately, there aren't reports of people dying or experiencing changes to their personality while lucid dreaming! And so, lucid dreaming appears to be another awesome thing our brains can do, but which we don't quite yet understand. Maybe one day, when our knowledge of the subtleties of dreams is greater, *Inception* will be no longer classed as science fiction.

**Be your own dream 'architect'.**





# Such Stuff As Dreams Are Made Of...

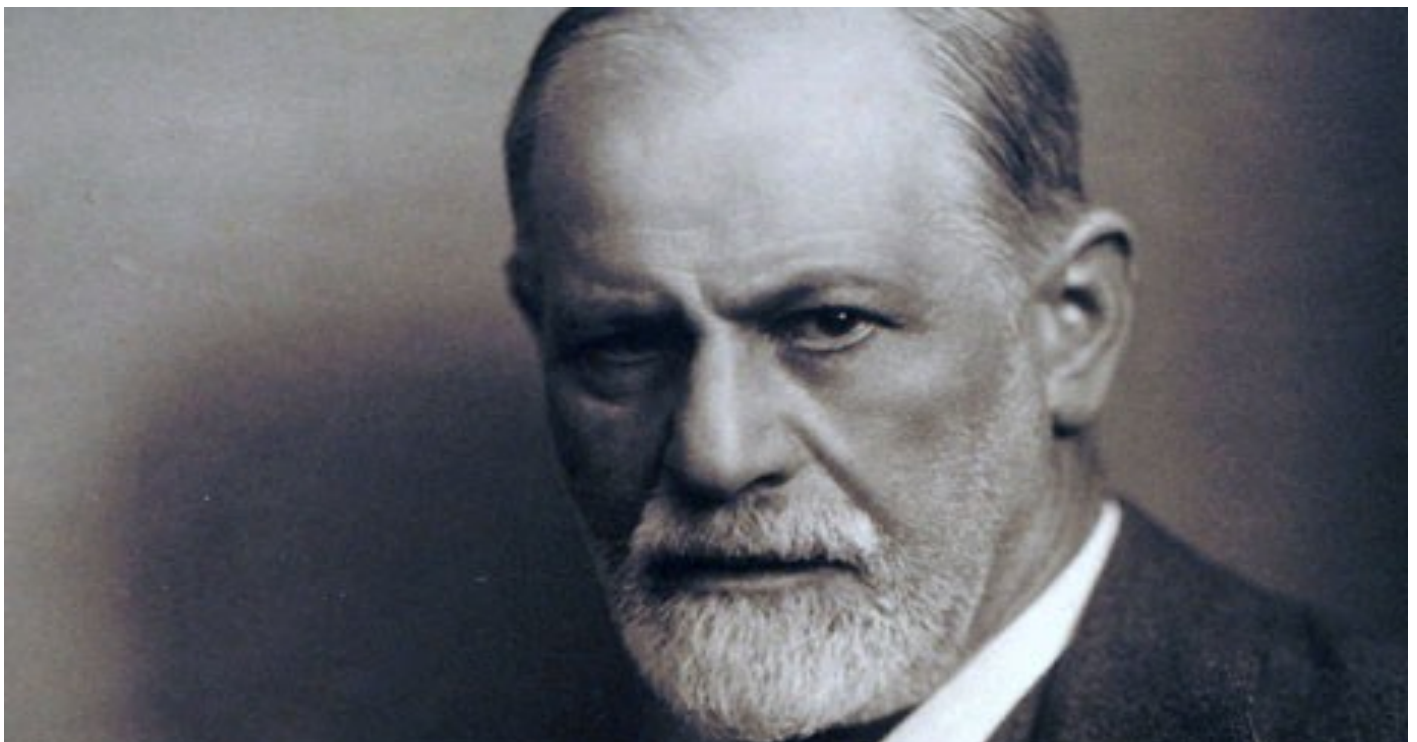
From Freud to the mysterious features of REM sleep, **Alix Dixon** explores the perplexing world of dreaming.

*"Dreaming is an altered state of consciousness in which remembered images and fantasies are temporarily confused with external reality."*

Theories of dreaming have long influenced literature and art in the western world, and the mystery surrounding dreaming has pushed artists and psychologists alike to discover its hidden nature. We know that dreams occur during rapid eye movement (REM) sleep, and can be extremely realistic or totally surreal, highly memorable or difficult to recall. But what could possibly be the function that lies behind the enigma of dreams?

**"[Freud]... believed that dreaming expresses the wishes of the sleeping person that are too painful or guilt inducing to be acknowledged during waking hours in the conscious mind."**

One of the earliest theories is Freud's Interpretation of Dreams. To Freud, dreams are the 'royal road to a knowledge of the unconscious activities of the mind'. He believed that dreaming expresses the wishes of the sleeping person that are too painful or guilt inducing to be acknowledged during waking hours in the conscious mind. Freud's dream work eventually led to the completion of the Oedipal theory, in which we see the male child showing sexual feelings towards their mother and destructive thoughts about their father. Freud believed that it was these feelings that were expressed symbolically through dreams. These ideas



**Sigmund Freud (1856-1939): The granddaddy of dream analysis**





**Flight of a bee around a pomegranate a second before awakening (Dali, 1944). Influenced by Freud's work, this painting is thought to reflect his exploration of the bizarre world of dreaming.**

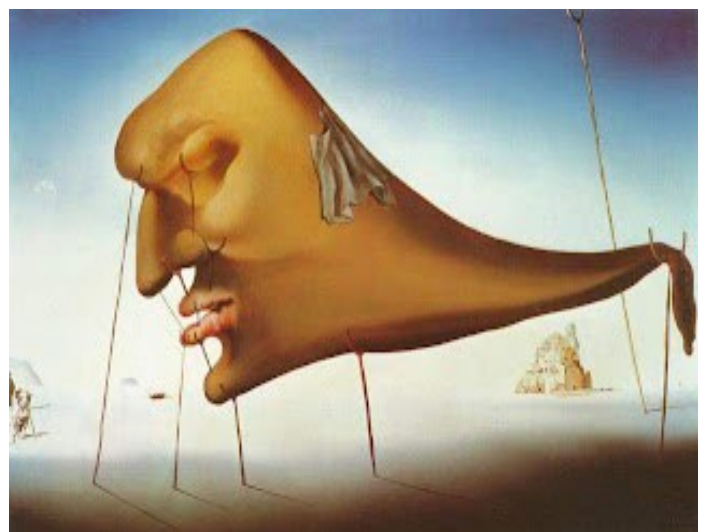
have been much used in literary theory and in naïve psychology, however in the wise words of William James: 'I can make nothing in my own case with his [Freud's] dream theories and obviously "symbolism" is a most dangerous method'.

From the subjectivity of Freudian theory, modern researchers have used other, more experimental methods to uncover the mystery of dreaming. Evans (1984) described REM sleep as a time in which the brain is able to switch off from the external world and sift through all the information that was obtained during the day, attempting to sort and consolidate it all. During dreaming, Evans believed that the brain actually switches back on for a short while, and so the conscious mind witnesses some of this sorting of

information and tries to interpret it as it would external stimuli.

Evans' theory seems to make some intuitive sense, but doesn't seem to explain all of the strange characteristics of dreaming. Hobson (1997) suggests that dreaming is characterized by formal visual imagery (similar to hallucinations), inconsistency of time, place and person (akin to disorientation), and difficulties in recall (similar to amnesia). So how could we possibly explain all these strange elements within the phenomenon of dreaming? Some suggest that dreams could be a form of problem solving (Cartwright, 1996). This theory would suggest that dreams are not simple representations of stimuli that have been absorbed by the person during the day, but may in fact reflect personal unresolved conflicts (Squier & Domhoff, 1998). This is supported by evidence that dreaming content differs across individuals. However, none of these ideas have substantial evidence behind them and often conflict with one another.

With all these different perspectives in mind, the lack of experimental evidence, and the practical difficulties in studying such a phenomenon, it seems quite clear that we are nowhere near fully uncovering the mysterious nature of dreaming.



**Sleep (Dali, 1937)**



# Napping: More Than Just Resting Your Eyes?

The beloved post-9.15 lecture nap: **Jen Ashton** explores its benefits and how to avoid feeling like a zombie afterwards.

As we all know, a 'nap' is a brief sleep taken during the day. The reasons for taking a nap can vary across individuals: with some using it to catch up on lost night-time sleep (replacement napping), to prepare for a loss of sleep in the future (prophylactic napping), or simply because the person enjoys it (appetitive napping). Studies in this area have found that the frequency of people taking naps can vary from 36% to 80% (Dinges, 1989), with this frequency increasing with age. Milner et al. (2006) showed 70.8% of first-year undergraduates to be habitual 'nappers', that is they napped regularly, from twice a week to every day, and Lawrence and Shurley (1970) found 4.5% of students to nap 4 or more days per week.

But what are the benefits of napping?

## 1. Increases alertness

Studies have shown that if you break up your day with a nap, your alertness will increase for the second half of the day. A reaction time improvement is also observed after napping, although accuracy is not affected (Takahashi & Arito, 2000). This has specific implications for driving and tasks which entail being highly alert and vigilant, if you have an activity planned for the evening an afternoon nap will allow you to stay alert and energised.

## 2. Improves learning, procedural and declarative memory

Procedural memory is a type of long term memory which is responsible for how we remember to do both motor and cognitive based activities, such as driving or reading.

Studies show that napping allows consolidation of learned material, increasing performance on tasks relative to 'no-nap' control groups (Backhaus & Junghanns, 2006). Some studies have also shown that declarative memory, i.e. memory for facts and explicit knowledge, is enhanced if a nap is taken a few hours within learning (Gais, Lucas, & Born, 2006). Perhaps a possible revision technique?



A calm and quiet place is ideal for a good nap.

## 3. Prevents information overload

Although we often avoid naps because we have too much to do, a study has shown that continued work without rest reduces productivity. Taking a short nap can eradicate this effect and enhance later performance (Mednick et al., 2002).

#### 4. Improves your health

When you sleep you release growth hormone, which boosts your immune system, primes your sexual function, reduces stress and anxiety, and aids in muscle repair and weight loss. Napping gives your brain a chance to rest and your body a chance to heal (Milner et al., 2006). It has also been found to lower the risk of heart disease in men.

#### 5. It's FREE!!

However, there are disadvantages to napping and this comes mainly in the form of sleep inertia, that groggy feeling you get following abrupt awakening. Although this is a common side effect to napping, there are specific ways to combat the effects.

One such way is to ensure you nap for only 20 minutes, which allows you to pass through the first two stages of sleep allowing you to relax, to build up energy and to strengthen your stamina. Waking up before you pass into stage 3 sleep, slow wave sleep (SWS), ensures you avoid that groggy feeling.

A second option is to take a longer nap of 90 minutes; this will allow you to pass through all the stages of sleep thus waking up at the end of a full cycle.

A third solution, for an extra energy boost, is to take a caffeine nap, this incorporates a caffeinated drink just before napping. The caffeine will take 20 minutes to absorb into the body, waking you up just before entering SWS sleep. Not only will you feel refreshed from the nap, but you will feel an added energy boost from the caffeine.

#### Tip For Getting The Most Out Of Your Nap

- Find somewhere quiet where you can fully relax.
- Naps sitting are better than no nap, but laying down is the optimal position.
- The best time to nap (depending on your sleep cycle) is between 2pm and 4pm.
- Do not nap within 3 hours of night time sleep at night.
- Ensure you time your nap in order to avoid sleep inertia.
- Enjoy your nap!!



**Lying down is the optimal napping position, but whatever floats your boat.**





## 5 minutes with a sleep researcher...

PsychOut caught up with **Elaine Tham** a PhD student in the Sleep, Language and Memory lab at the University of York.

### 1. Tell us about your research.

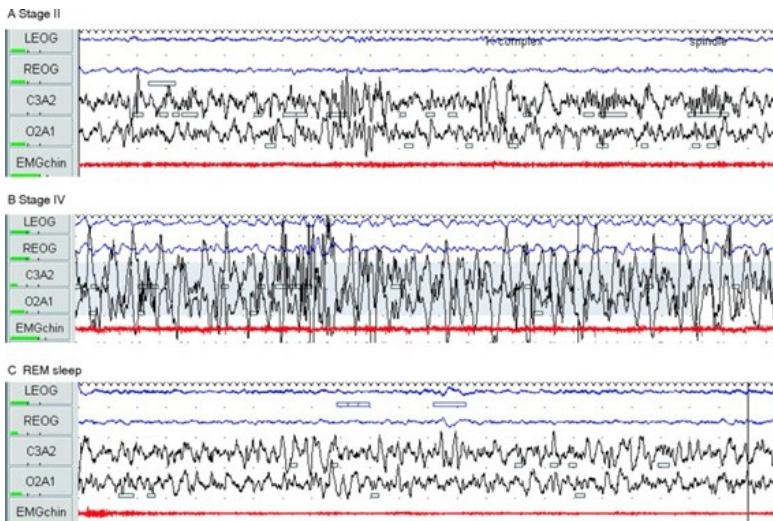
My broad research topic looks at the effects of sleep on memory and learning. I am particularly interested in investigating how sleep enhances the automaticity of processing meanings of new words in second language learning. Using sleep polysomnography, I am also investigating if brain activity during different stages and unique components of sleep play different roles in enhancing performance. This will enable me to gain more insight as to how sleep helps integrate new words into our existing knowledge. I have also conducted both overnight sleep studies and nap studies – this enables me to also look at the effect of the duration of sleep on memory and learning.

### 2. What was it that first attracted you to sleep research?

I was first exposed to the ideal of sleep and memory consolidation when I did a summer research internship with Gareth Gaskell (who is now my PhD supervisor) in my second undergraduate year. It sounded very interesting, especially since I particularly enjoyed the topic of memory and also language. I read up about it during my free time and went on to design and conduct a behavioural sleep study for my third year research project – I was convinced I wanted to be a sleep researcher after that!



**York Psychology department has its own sleep lab with two private bedrooms each equipped with computers for running experiments, video cameras, and speakers for playing auditory stimuli.**



**“Polysomnography” is the classic method of recording activity during sleep, categorising each 30 second section leads to a way of describing the quality of sleep in terms of stages.**

### 3. What would be a typical day in the Sleep, Language and Memory lab?

That is a fun question as there is no typical day in the SLAM lab: there are lots of different things that can be happening...

You may see the following if you walk into the SLAM lab:

- \*Preparing for a sleep experiment: This is the least fun bit but very important. We'll be changing sheets, checking equipment and cutting up lots of surgical tape for the sleep EEG wire-up

- \* Running an experiment: This includes wiring up a participant for the study. We set up various 'sensors' on the participant's face, and head that monitor different aspects of their sleep physiology, but none of these sensors will disturb their normal brain or body activity in any way. We also attach electrical sensors using a 'sticky gel' that helps with electrical conductance.

- \* Analysing data: After collecting sleep data, we'll still have to score it as sleep occurs in stages. We follow standardized criteria whilst scoring to ensure the greatest accuracy!

### 4. What is the most interesting thing about sleep that you have discovered as a researcher?

The whole topic about sleep is very exciting but what I find most interesting is how dynamic sleep actually is – each stage is unique! Different components of sleep play specific roles in memory consolidation. Observing these stages of sleep unfold in real-time sleep polysomnography recording still amazes me.

### 5. What paper would you recommend to an undergraduate interested in finding out more about the psychology of sleep?

There are many different theories about sleep and I would recommend starting off with a review article. The Diekelmann and Born (2010) review 'Memory Function of Sleep' is a good starting point.



For more information  
 SLAM homepage: <http://www.york.ac.uk/psychology/research/groups/slam/>



## Meet the Staff

### Academic Skills

How to get the best out of your brain whilst at University: The staff share their advice for success in the workplace.

#### How do you strike the balance between work and leisure time?

Quentin: With difficulty. Always have an enjoyable event looming somewhere on the horizon. Make time for your friends and family. When you are with them, do something special.

Katie: I try and ensure weekends and most evenings are free from work – I sometimes have to break this rule, but generally it ensures I have time for my family, friends and sports, which in turn increases my productivity at work.

Silke: Work hard, play hard. I try not to work on weekends, I usually go on long bike rides on Sundays and I love travelling - so I do take my holidays.

I genuinely enjoy most of my work so it can feel like leisure. Also there are ways to combine work and leisure. Some of my collaborators are also my friends, we talk about the most recent data set while running together. Quite a few of my research projects began with chats on ski lifts in the dolomites or discussions in bars.

Nick: This of course is very hard! There's always considerably more work to be done than is possible given the hours in the day. I don't see this getting better with time. I try to make sure I do some form of exercise a few times a week as it helps me be more efficient when I am actually at work.







### What motivates you when working on research?

Quentin: Having 'wow moments' when one makes connections and realizes that one has discovered something new. Also, influencing policy and bringing benefit to society.

Katie: I'm like a chimp in the sense that I'm very food motivated so bribing myself with tasty snacks has always been a good strategy for me! My productivity is highest when I ensure I have clear breaks from work – working without good breaks results in me working slower, being less focused and more distracted. For me the most effective breaks are horse riding – exercise and it takes my mind completely off work, giving me a mental break as well.



Silke: I just want to know the results - usually there is an important question, then I design an experiment that would hopefully provide the answer - so it's mainly curiosity! Then once I know the results it's fun to think about how to tell the story and communicate it to all kinds of audiences in the best possible way. That also makes me think about the potential implications of the research - which is satisfying in itself.



Andy: Research is exciting when you think you're finding something out, but a lot of the time it can also be tedious or frustrating. I'm basically lazy and impatient, but I just try to pretend to myself that I'm hard-working and persistent. Sometimes it works.

Nick: In essence - discovery. Who would not want a job where your role is to be the first person to discover new and exciting things about people and the world?

### Lark or owl? When and how do you work best?

Quentin: I used to be an owl but the older I get the more larkish I become.

Katie: Definitely during the day - and I think mornings are most productive for me.

Silke: I am an owl. Most of my thesis I wrote in the evening and during night. However, this is obviously not in sync with lecture times and can lead to no social life because then I am working when other people have their leisure time. So I try to compromise. Most days I'll start working around 9am and finish around 7pm. But if I get really into a project I'll work into the night and get up later on the next day if I can.

Nick: I'm a lark I suppose, and have got more like that over the years. I'm up usually around 6am to start work; there are actually quite a few hours early in the morning that allow you to get things done. I also know when I "think" best (morning, late afternoon), and tailor my work so that I do the complicated work during those hours. I do easier but time consuming work like administration at other times (early afternoon, evening) when I'm perhaps not at my sharpest.

### **What would be your number one tip for managing a heavy workload?**

Quentin: Realise that, if you have to, what used to take a week need only take a day, and what used to take day can probably be done in an hour.

Katie: For me lists are key – I have lists of what I need to achieve each week, then first thing on Monday I try and schedule that week's list into each day – so each day I have a target list of things to complete. I find having it all written down and a clear plan made very calming! In terms of prioritising things I am still learning to distinguish between important and urgent tasks – I have a tendency to prioritise things in the 'urgent' category regardless of importance, meaning that important non-urgent things get neglected.. so I am trying to prioritise important tasks.

Silke: Keep track of how long things take you so you have a good estimate of how long each task will take you roughly. Make a list of all tasks to do. Go through them and sort them by priority. Then plan what to do when (i.e. putting it in your diary, blocking the time for it), starting with the most important tasks - plan for tasks to take at least 15% longer than you think they'll take. Plan some time to relax, do sports, meet up with friends too. Then start working and just keep working through your list.

Andy: Working is a bit like running training - the more regularly you do it, the easier it gets (as long as you don't overdo it).

Nick: Lists. I am very organised and write and amend lots of lists. Put everything you do on your list, break large projects into lots of small manageable tasks and get them all down on your list. Now start ticking things off!

Phillip: Whenever you have a major piece of work to complete and you are having real difficulties getting through it then decide a word count that is manageable to complete in a day. Do not overestimate this as you must stick with it for the advice to be fruitful. You then MUST complete this word count every day until in the work is finished. Now it does not matter if you surpass the count but you are not allowed to fall short on any working day. So set a minimum and complete this EVERY DAY. The recreational drugs and alcohol than act as a reward once the work is complete.

### **As an undergraduate, what got you through exam time?**

Quentin: Caffeine.

Katie: I started revision early so was well prepared – close to the exam I prioritised sleep so I was alert and thinking in the exam. Just before an exam I would panic and get nervous if people who were trying to cram asked me a question I didn't know the answer to, so I avoided people and often went and fed peanuts to the squirrels on campus in the 30 min before an exam!

Silke: Good planning. I used to have a clear plan of exactly what to read when, blocked time for extra reading, putting it all together and thinking about it. We had study groups, so I would meet with one or two friends once a week to discuss what we had learned. I also produced A3 visual overviews of topics and sometimes some audio recordings of stuff to revise that I could listen to on the train or in the car.



**Marcel Zentner** is heading the Personality, Emotion and Music Laboratory at The University of York. He has a distinguished career behind him and has conducted research on both sides of the Atlantic with many of the other great names in his field, most notably Jerome Kagan with whom he worked as a post-doc. He speaks five languages. He also enjoys playing the piano. **Tomas Folke** dropped by for a chat.

### **What does psychology mean to you?**

Well, I think to me it really represents the royal road to understanding people's behaviour and experience. And when I say that, you can see how incredibly far-reaching this field is. So to me it also represents an extremely exciting area of study and practice.

### **When did you become interested in psychology and how come you decided to pursue it as a career?**

I was very interested in psychology as an adolescent. In fact, recently I went through some old remains and I found a little yellow booklet with the title '*A Psychology*', written when I was 12. '*A Psychology*' came with some scientific pretension and consisted of attempts to explain people's behaviour in certain situations using case studies. I could not have known then that, thirty years later, I was to edit a 700 page major volume on the

psychology of personality, entitled 'The Handbook of Temperament'. I think it's a bit better and especially more comprehensive than '*A Psychology*', but evidently lacks the novice's charm.

After my high school degree I didn't quite know what to study and I was very interested in philosophy and medicine, so I guess I choose psychology as a kind of compromise. In the first year I found it boring, and I actually considered quitting, but then came a turning point in that I spent one year as an exchange student in the United States at Harvard University. Just watching the professors there – they were extremely passionate about their subject – made a huge difference for me.

### **So how did you develop your career in Psychology once you realised that this was what you wanted to do?**



I was a bit indecisive as to whether I should pursue a career as a researcher or as a psychotherapist. Fortunately, I did not become the latter! I had almost settled for doing a doctorate in clinical psychology at the University of Zürich, but this disaster was prevented by a letter I sent to Jerome Kagan (a Harvard celebrity) exploring possibilities to work in his laboratory. Amazingly he replied saying that he had a place. After my PhD I went to work as a post-doctoral associate in his laboratory. That was a terrific experience and that's when I seriously started to consider a career as a researcher.

Getting to the post doc stage is fairly easy, the trick in academia is finding a stable position. I had started to work on music while I still was at Harvard and, pondering about my uncertain future, I noticed that Klaus Scherer, a specialist in the study of emotion and professor in Geneva, was also interested in music. So I contacted him and I was given a position in Geneva and ended up staying there for more than 10 years.

**You mentioned you started your music research already back in Harvard. Can you tell us a bit more about how that came about?**

Well, my interest in music has a very long history dating back to my childhood but I never thought I could combine my piano playing with my interest in psychology.

Music was not a particularly attractive area for psychologists then (that has changed a lot now), and there was still much to discover. I chose to work on some possible universals in music such as perceptions of consonance and dissonance and felt lucky to be in Kagan's infant lab, where I could explore infants' musical tastes. This research ended up being published in *Nature*. When I moved to Geneva I continued this work, but I never really worked as a music psychologist; on issues such as perception,

performance, perception of tones, amusia to stage fright etc. My main interest has been in characterizing emotional effects of music using both psychological and neuroimaging methods. That's something that has occupied me for several years leading to a new system for the characterization and classifications of musical emotions (the so called GEMS-model).

**So how have you managed to combine your two research topics, namely personality trait research and music and emotion?**

That's actually a good question; it was sort of a late marriage. I think it really started to evolve after I came to York. Received wisdom has it that music is cross-culturally liked and clearly emotion is an important part in this liking. But it is also true that there are quite huge individual differences in the extent to which people like, and are good at, music. I have coined the term Music Mindedness to designate individual differences in emotive reactivity to music and in musical skill. Currently, I am working on developing measures for these individual differences, one of which is an ability test called the Profile of Musical Skills (PROMS) developed with Lily Law, one of my PhD students. So this is how I have combined the two: Music Mindedness is a trait, the musical personality trait! I'm actually very pleased to have found this synthesis.

**It is really interesting that you are creating a completely new test from scratch. How do you go about validating something like this?**

It's tough, because there are no other well-conceived tests against which to validate ours. Musicians should perform better than non-musicians on any such test, but comparing both groups has limitations as a validation strategy. It's a bit like measuring language ability by comparing monolinguals' with bilinguals'

performance on a reading test. Monolinguals, may be very talented, yet just lacked the opportunity to learn a second language. The same could be said for non-musicians who just lacked the opportunity to learn a musical instrument. A more specific validation is needed. We have different elements in this test, for example certain rhythms, timbre (which is the sound quality), pitch and so forth. So I think this would be best validated by comparing certain professional groups on the sub-scales. For example, percussionists should perform really well on the rhythm task but perhaps less so on other tasks. So it is a long process. We are really cutting a path into uncharted territory.

**Staying with the topic of Music Mindedness, do you think there is a hereditary component in Music Mindedness and if so what would it consist of?**

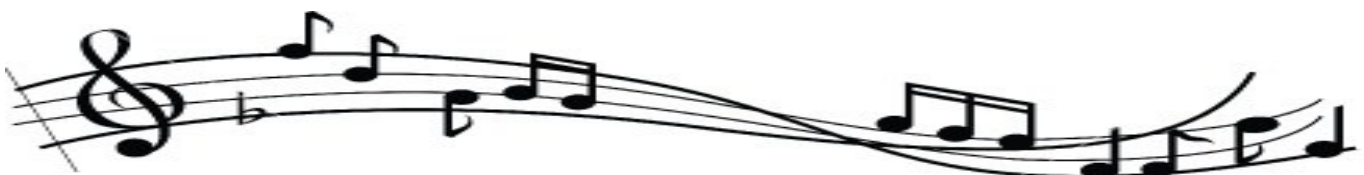
There is some preliminary evidence for genetic effects on musical ability and these findings are somewhat related to our work, which tries to identify musically non-trained but talented people. You get a sense whether you are linguistically able or mathematically able quite quickly because that is required in school, but whether you are musical or not is a different matter. You might be musical but not aware of it. So our test is conceived in a way so that it can identify what I call 'musical sleepers'. I think this is an interesting topic because sleepers may exist in other domains of mental and psychological abilities such as linguistic ability.

**Moving on to your other major research topic: what developments do you expect to see in personality research over the next decade?**

Personality traits are predictive of important life outcomes, such as longevity and occupational success. Personality also plays a role in mate choice and divorce, and some of my work has been in this very domain. In addition, I can see three developments are clearly discernible: One is the neurogenetics of personality differences, also called 'temperament', and the implications of these temperamental predispositions for individuals' psychological development and adjustment. I had the good fortune to edit a Handbook on this fascinating subject and can say that I have a good knowledge of what is going on in this research area, from molecular genetics to prevention programmes helping children with tendencies to impulsivity or extreme shyness. I am about to publish a temperament scale that can be used as a screening device for at-risk temperament in early childhood.

Another important development I can see is the increasing importance of personality in psychopathology. So, as you know, this started out with personality disorders, which are becoming more and more important. Also, trait psychology has started to work its way into the diagnosis of psychological disorders, behaviour disorders and so on. In DSM-V personality will be a lot more present compared to DSM-IV.

Finally, the move towards personalized medicine and healthcare will also provide new venues for the use of personality concepts and measures. For example, there is evidence to suggest that a temperament diagnosis could help to predict which patients will respond best to a given psychotropic agent. So I think that the role of personality within psychology will become more and more important in the next ten years. It's nice to be part of this trend.





# Psychology Around the World

*Our writers find out more about Psychology across the world's cultures.*



## An Englishman, an Irishman and a Scotsman...

**Amy Ulliott** looks into the science behind cultural stereotypes.

Every country has a personality stereotype that is recognised worldwide. And so you are probably aware that Americans are brash and talkative, Germans are very organised and direct and the English are polite and reserved, right? The personality stereotypes associated with different countries and cultures encourage individuals to form general judgements about people and develop the assumption that every person within that specific country has those cultural traits or that general personality type.

These personality stereotypes have been portrayed to us in many different ways throughout history, for instance through the media and in popular jokes. Within the media, many examples of these national stereotypes are presented in books, films, television programmes and spread across the internet. Take, for example, the political satire *In the Loop* based on the TV programme *The Thick Of It*. In this comedy about international politics, Americans are presented as being very assertive and overconfident, whilst the majority of the British politicians in both the film and TV series appear quiet and bumbling. Many other films show examples of national personality stereotypes such as Alfred the

overly polite British butler in the *Batman* films, right down to the Australian sea turtles in *Finding Nemo* who are incredibly laid back and chilled out.



**Alfred Pennyworth, a stereotypical old English bean serving at Wayne Manor.**





**"G'day mate, put another shrimp on the barbie for me?"**

However, we may question whether there are any psychological studies providing scientific evidence that these national stereotypes are true and actually exist in the real world? It turns out that these personality stereotypes are exactly that, just stereotypes, and there is little evidence supporting the cultural and national identities that they convey. In a worldwide study conducted by Terracciano et al. (2005) on over 40,000 individuals from 49 different cultures, they found that overall, the perceptions of national character did not significantly mirror the data collected and the actual personality traits demonstrated by the people from each of those separate cultures.

When participants were asked to describe their own national personality, their concepts were very similar to those of their fellow citizens as well as those of people from other nations. For example, in line with commonly held stereotypes, the British ranked themselves quite highly on the introversion scale, and Argentinians thought themselves to be fairly disagreeable. However, the study revealed that individual's self-reported personality ratings and ratings made by an observer were not consistent with the cultural personality stereotypes.

As these stereotypes do not seem to accurately represent the cultures with which they're associated, it may be that they "... serve the function of maintaining a national identity" (Robins, 2005) and help to encourage a feeling of belonging amongst that nation's people. After all, an individual's personality is a vital part of who they are and will help to form strong connections between people if they feel it is something they share.

So whilst research may dampen the illusion of any perceived 'personality stereotype', it appears that there are still some advantages to these somewhat false perceptions, as they may bring those in that culture closer together and help to form a stronger national identity.



**Du pain, du vin et du Boursin, clearly the way to this man's heart.**



## Knowing Me, Knowing You?

**Jack Blake** reflects on the accidental discovery that has revolutionised how we understand and discriminate the meaning behind actions.

Besides being a number one hit for Abba in 1977, the phrase “knowing me, knowing you” actually touches upon a phenomenon that we experience every day and has been a fundamental question within psychology for many years – how do we understand and discriminate the meaning behind actions? The same hand movement can communicate two completely different meanings, for example grasping an object to eat and grasping an object to pass to another individual. So how do we understand these actions? A set of neurons called mirror neurons are said to be responsible for this knowledge.

Like many of the great scientific discoveries, mirror neurons were found completely by accident. Dipellegrino (1992) conducted single cell recording from the premotor cortex of monkeys as they performed various motor tasks. As expected, the researchers found many neurons in the premotor cortex fired when the animal completed various reaching and grasping tasks. However, as a research assistant reached to replace the target object, thereby completing the same action the monkey had executed, a group of neurons in the premotor cortex fired again. From this it was concluded that a subset of neurons activates when we perform an action and when we see someone else doing it – mirror neurons. It was suggested that the activation of mirror neurons in response to observing an action creates a motor representation, which allows the observer to understand how they would

perform the observed movement and the meaning behind it.

However, in everyday life, objects are constantly moving in and out of vision due to people/objects passing in front of us, yet we

***“Like many of the great scientific discoveries, mirror neurons were found completely by accident.”***

are still able to understand the action being performed, such as reaching to retrieve your wallet out of

your back pocket. If mirror neurons truly represent action understanding then they should still activate when the hand-object interaction is not visible? Umiltà (2001) investigated this by using two experimental conditions. “Full vision” where the monkey was shown a fully visible action movement involving an object and “hidden vision” where the same action was executed but the hand-object interaction moment was hidden from the monkey by an opaque screen. 19/37 mirror neurons in the premotor cortex responded in both “full vision” and “hidden vision” conditions.



**The study of mirror neurons has led to a greater understanding of the neural processes involved in empathy.**



**"Gimme, gimme, gimme...something witty to put in this caption."**

Therefore it appears mirror neurons still activate when the action directed towards an object is not visible, showing mirror neurons are involved in the understanding of actions. Research has also found that 13% of mirror neurons responded both when a monkey performed a specific hand action, and when it heard the corresponding action-related sound, such as a peanut being cracked open. This shows that mirror neurons also encode the meaning behind action in different modalities.

However, these results are not fully conclusive in determining the role mirror neurons play in action understanding. Umiltà (2001) suggests that almost half of all mirror neurons are not coding action understanding, as 18/37 neurons did not respond in the "hidden vision" condition. Likewise, Kohler (2002) indicates that 87% of mirror neurons are not involved in action understanding. No explanation is offered as to why only a small proportion of mirror neurons respond in these conditions and this does cast doubt on the size of the role mirror neurons play in understanding the intentions of actions.

Studies have also sought to ensure that the mirror neuron system (MNS) in humans is responsible for action understanding and not encoding the biomechanics of motor actions. Gazzola (2007) presented participants with videos of human hands or robotic arms performing simple and complex object-oriented actions. If mirror neurons encode the goal of actions then the use of different tools

to achieve the same goal should still result in mirror neuron activation. They found significant mirror neuron activation in both conditions, and importantly, no significant differences in the strength of activation was found when either the robotic or human limb completed the same actions. This study shows that mirror neurons code the goal of actions as they consistently activate to object oriented tasks even when the method of execution is different.

The implications of mirror neurons and their role in action understanding is immense. Many researchers have proposed that mirror neurons provide a system for generating and recognizing actions, and from this, language is believed to have developed. The above research shows the MNS allowed monkeys to communicate using hand gestures, and using this system oro-facial gestures and eventually primate vocalizations were able to convey information. Other psychologists are making the natural progression in suggesting that mirror neurons are involved in the development of empathy. This idea is supported by research showing that individuals who rate themselves as highly empathic show stronger activations in the mirror system when viewing emotional face stimuli compared to low empathic individuals.

So, how do we understand and discriminate the meaning behind actions? Mirror neurons appear to be the answer, although many questions still remain unanswered. As researchers are beginning to recognise the potential impact of mirror neurons and their ability to explain many aspects of human behaviour, the outstanding concerns should soon be answered. Excitingly, we may be witnessing the unravelling of one of the greatest neuroscientific discoveries in modern science. Indeed one famous neuroscientist, Vilayanur Ramachandran, was quoted as saying "mirror neurons would do for psychology what DNA did for biology".





# Waddle They Thinking?

**Daniel Bennett** and **Mary Gellert** turn their mind-reading curiosity to the campus VIP residents.



Ducks communicate, eat, swim, waddle and reproduce - like us. But to what degree do they think about these actions? Are they controlled by automatic biological processes, or do they use conscious cognitive abilities?



**Photobomb.**

You're walking across campus and generously toss a duck the rest of your sandwich. He looks at you for a while, assessing how friendly you seem and whether you're likely to have poisoned it. Deciding you're trustworthy, he waddles over to where the sandwich lies and proceeds to eat it. When finished he gives you a grateful look. You're late for your tutorial because of this befriending session, so you leave hurriedly, but at peace because you know you'll see him on the way back, and he'll recognise you as the kind soul who fed him; his new friend.

But will he? We often attribute thoughts and complex cognitive abilities to animals, but on what basis? Can they evaluate a sense of their own and others' identity, have an internal monologue and the consciousness

which we so commonly attribute to them?

Consciousness is defined inconsistently, but often considered to be an animal's complexity and awareness of their cognitive processes. It is thought to have developed as brains evolved. The 'reptilian brain' only controls the body's vital functions, whereas the next layer, the 'limbic' (emotional) brain, evolved in the first mammals to manage emotions and subconscious value judgements that influence behaviour. These two layers largely work unconsciously whereas the final, the "neo-mammalian" or "thinking" brain, is said to work more consciously.

So, what about ducks? As birds, you would expect their brains to be as the reptilian, allowing only behaviour ruled by subconscious processes. Thus, you might be wise to reconsider your assumptions that the above mentioned duck was grateful for your sandwich and will remember you fondly, and to maybe abandon hope for your newfound friendship.

But all may not be lost. Before giving in completely to these predictions, consider insights provided by studies of birds. Firstly, Alex the mathematical parrot appears to add sets of objects and order Arabic numerals. He identifies shapes, colours and materials, expresses apparent frustration and boredom and responds to questions with vocalisations. His psychologist owner concludes that Alex could apply knowledge and understanding to abstract concepts – consciousness?

Other birds seem to bear a lot in mind too, for instance scrub jays stash an

abundance of food over winter. Not only remembering where it all is, they apparently know that the tasty moth-larvae will rot and so they recover it first and have their trusty peanuts nearer spring. Do they use mental time travel to go back to burial, and then make decisions about how to act based upon when and what happened? What actually goes on inside the birds' heads remains unknown. Is it thinking or inbuilt, automatic behaviour?

The monkey world displays promising signs of true thinking. Experiments demonstrate that they participate in teamwork, but do they recognise that it's useful because an investment to help another will yield a return of help when needed in the future – or do they behave so because they've evolved to? Horner (2011) found that given the choice to feed just 'itself' or 'itself and neighbour', chimpanzees would normally choose to feed both (subject to the neighbours' behaviour of course!), and so appear to care about the well-being of others.

Brosnan found that if one capuchin is given the less desirable cucumber and its neighbour given the super tasty grape, then often the one receiving the grape will refuse it until both monkeys are treated fairly; the monkey would in fact throw the cucumber with vigour at the experimenter! This news that monkeys can act in such pro-social and



**Is this my reflection?**



**I think you just stepped in something...**

complex ways is great – however it still struggles to say whether the monkey truly knows that its behaviour is beneficial.

So what might all the evidence tell us about the capabilities of ducks? It indicates that birds might have memory, decision making and thinking beyond that expected from their brain structure, but there is nothing to say what is actually going on inside their heads. We can make inferences from displayed behaviour, but are they accurate? Without being able to ask a duck what it's thinking, discovering whether they have conscious thought is going to be difficult. Maybe the answer will lie in looking at behavioural difference in ducks with the same biology and learning experience, and whether these suggest a subjective awareness of situations. But will we ever really know? For now just carry on building your relationship with your new duck friend. It may well remember you, and at least there's no harm trying...



# 5 Tips for Finding and Keeping Your Perfect Mate

Empirically-sound advice on finding your other half as recommended by **Ophelia Groth**.

In a world full of romantic comedies, Cosmo, and online dating guides, it's difficult to separate good dating tips from the bad. There's a mate out there for everyone, but how do we increase our chances of finding that special someone? Fortunately, psychologists have set out to answer this question, identifying the factors that can make or break a romance. Throw out the pop culture dating advice, and turn instead to psychology for the most empirically sound, tried and true dating advice.

## 1. Don't travel too far

In contrast to what the great class-, distance-, and social-boundary traversing love stories may imply, the love of your life "typically lives within driving distance" (Buss, 1985). Evidence converges on the fact that we tend to marry people who live near us and



**Do you dream of a tall leggy blonde?**

who resemble us in ethnicity, age, race, and socioeconomic status. We may meet our lovers because of where we were from, or because we get funnelled in institutions and jobs which attract similar people (Botwin

et al., 1997). Don't travel far to find a potential mate – you'll have better luck searching your college accommodation block.

## 2. Know your political and religious values

Fancy a bit of David Cameron? Or are you a lover of all things Miliband? As long as you're firm and decided in your political beliefs, you're prepared to find love. Couples tend to be highly similar in political views (Luo & Klohnen, 2005) in addition to their similarity in demographic variables. An equally powerful predictor of relationship satisfaction is shared religious belief (Gaunt, 2006). Though you may be tempted to be open-minded and date within various religions and political philosophies, your relationship is more likely to last if your partner shares your political and religious values (or lack thereof).

## 3. Have an ideal mate in mind

A long-standing mystery in social psychology is whether we prefer partners who are similar or different to ourselves in terms of personality. Some people seem to date duplicates of themselves, while others opt for their polar opposite. It turns out that a major predictor of relationship outcome is whether the individual's ideal mate personality concept is congruent with their partner's *actual* personality concept (Zentner, 2005). In other words, you're more likely to have a long-lasting relationship with someone whose



personality matches your ideal mate. While settling for your mediocre Ziggy's conquest may get you into a relationship quickly, it won't last as long as your relationship with Mr. or Mrs. Right!

#### **4. Communication is key**

So you've found a lover close-by, identified similar values, and made sure the person matches your ideal mate personality concept. Once you've found your one-and-only, it can be difficult knowing exactly how to maintain the relationship and savour the perfection. Research has identified communication as a critical determinant of relationship satisfaction and dissolution. Marriage expert, John Gottman, identified four key negative acts predictive of relationship dissolution: criticism, contempt, defensiveness and stonewalling (Gottman, 1993). Known as 'The Four Horsemen of the Apocalypse', these documented behaviours highlight the importance of constructive communication to relationship longevity.

In a longitudinal study, Markman (1981) found that couples who rated their communication positively were more likely to be satisfied with the relationship five years later. Conflict is only a problem when communicated poorly: even negative emotions such as jealousy don't need to be detrimental to your relationship, as long as you communicate them constructively (Andersen et al., 2009). Related to constructive communication is self-disclosure, a person's willingness to disclose details about themselves is also positively related to relationship satisfaction (Sprecher & Hendrick, 2004), showing that sharing really means caring.



**"Eats, shoots and leaves - get it?" Communication is the make or break of a long-lasting relationship...as is laughing at bad panda jokes.**

#### **5. Work on yourself**

Satisfaction doesn't just come down to finding a perfect partner: it may take a bit of self-improvement to keep both of you happy. While we all have subtly different partner preferences, research shows that both men and women prefer mates who are highly agreeable, emotionally stable, and intelligent, which in turn leads to more satisfying relationships (Botwin et al., 1997). Try to get rid of your neuroses, become a little bit nicer, and don't slack off on your degree or learning about current events, and you'll be well on your way to finding that special someone.

Moreover, your beliefs about what controls the course of your relationship – known as a "locus of control" – will significantly impact your love life. Individuals with internal loci of control who believe that relationships develop as a result of personal effort are more satisfied in their relationships than those who believe in luck and context (Camp & Ganong, 1997). In fact, developing an internal locus of control is even associated with higher academic achievement (Findley & Cooper, 1983), showing that being the best you can be is great for both yourself and for your relationship.



# Careers

## What can you do with a Psychology degree?

*Discover courses and careers in psychology.*



### I've Got a Golden (Social Media) Ticket

Need help promoting yourself as the perfect employee? **Sarah Bartlett** suggests how social networks might do the trick.

Getting a job after graduation has never been so difficult. So what do we need to be thinking about to set ourselves apart from the hundreds, or even thousands of other applicants applying to those oh-so-sought-after grad schemes?

#### Let's Get Social

In my opinion, the golden ticket lies within the realm of social media. It's a relatively new concept and anyone who is anyone (or trying to be) has Facebook, Twitter, Linked In, a blog etc...you see where this list is going! So what is it about these that make them so important in our search for the perfect graduate job? Well essentially, digital media is fast approaching to be the new platform of communication; forget telephones, your next interview may well be over Skype, and there may come a time in the near future where you can forget word document CVs. Employers (especially in the media and anything-else-remotely-creative industries) are searching for that creative spark; anything that makes you stand out a cut above the rest. The other day I came across a CV that had been done on Photoshop... At first I thought oh this is just

another one of those show-off 'arty' types, but as I read on (as I found I couldn't NOT look at it), I thought well this is absolute genius! All the details were so graphically pleasing to the eye, and the girl had even created little 'characters' with speech bubbles to illustrate her references. The whole thing screamed originality, intuition and tons of creativity; a perfect recipe for a successful candidate. Now I'm not saying we all need to jump up and scrap our traditional CVs in favour of an artistic alternative, but I think we just need to keep in mind that we should be



Perhaps a video CV with its own soundtrack and made-up words might be pushing it a little.

aware of creative and exciting ways to 'sell' ourselves on our CV.

### Blog It, Pin It, Share It

Something that may help us achieve this is starting a blog. A blog will show your interviewer that you have passion and dedication to your field. You can stick a link to your blog on your CV, so your interviewer can go to it direct. What the bloody hell do I blog about? I hear you ask... Well, I guess there's not really a direct answer to that, but if you're serious about getting that dream job then you could blog about your chosen industry - what you like, why you like it, and maybe what you don't like so much. Similar to blogging is this new craze called Pinterest. This is basically an online pin board where you can share with the world all the wonderful things you like by 'pinning' them. Think of it as fridge door; you pin useful information and fun stuff there, right?

# Pinterest



**PsychOut Magazine is not liable for hours lost 'pinning' during revision periods. You've been warned.**



**Find helpful contacts for work opportunities and show off your virtual CV on Linked In.**

### Link It

So finally, to help smoothly link all your social media outlets, you should set up a Linked In account; this is where you can provide links to all your other accounts (twitter, your blog, Pinterest, Facebook - if it's suitable for employers to read that is!) Linked In can also be like a virtual CV; you can list all your previous employment, education and any experience you may have gained. So get cracking and increase your social media status. You never know, it might get you your dream job. And if it doesn't, well you just became a hell of a lot cooler.

*For more tips and advice on how to land your dream job, sign up to [www.gradgame.com](http://www.gradgame.com) where you can interact with other like-minded students and graduates. You can even add to your CV by uploading your blogs or articles that may be relevant. If you're social media savvy then follow us on twitter: @gradgameyork, or find us on Facebook: The Graduate Game. And if you're really with it then follow us on Pinterest: <http://pinterest.com/gradgameyork/>*



# Class of 2012: After Graduation Plans

We asked this year's graduates what's next after picking up a Bsc from York.

## Emily Barret

I am going to do a combined **PGCE in primary level and masters in education** at Cambridge University. It is a two year course and hopefully afterwards I will teach.

## Sarah Bartlett

I'm going to have a year out. I want to go into **advertising and marketing**, so I will try and get an internship or work experience in the summer, save to go to Australia and New Zealand for 2 months and apply to advertising grad schemes that will start next autumn.

## Dan Bennett

I've really enjoyed helping out on the open days and getting involved in promoting the department and so I'm currently applying for work experience in **marketing and PR**.

## Joy Bothamley

I'm hoping to complete a **MSc in cognitive neuroscience** and eventually carry out a PhD in the department. I love learning about Psychology and it's a really good opportunity to explore more.

## Clare Breare

I received 4 offers for masters including a place at Durham to do **Developmental Cognitive Neuroscience MSc** and at Lancaster to do **Developmental Disorders MSc**. I will decide after my exams which one I'm going to accept. Eventually, I want to do a PhD in Educational Psychology and so all the experience my BSc and MSc has afforded me will prove to be invaluable.

## Milly Carlson

I'm hoping to do an **MSc in Speech and Language Therapy** at the University of Essex.

## Marianne Cezza

After doing a TEFL course this summer, I'll hopefully be **teaching English as a foreign language** somewhere in Italy for a year or so. Eventually, I would like to merge my interests in languages and Psychology... possibly in some sort of masters.

## Francina Clayton

I have a conditional offer to complete a **PhD at UCL studying deficits in letter-sound integration** as a potential cause of dyslexia. I received a summer bursary to help out with EEG research on dyslexia and I've always been interested in developmental psychology and working with children.

## Chryso Constantinou

After my Psychology degree I would like to continue onto **postgraduate study in Human Resource Management**. I chose this career path because it will allow me to combine aspects of Psychology within a more practical and realistic managerial context.

### **Charlotte Driver**

After graduating I hope to carry out a **MSc in neuroscience** because I really like learning about a field that has exciting and ever changing research prospects.

### **Louise Durant**

I will shortly be applying for the **Hull-York Clinical Psychology Doctorate**. I also have plans to **volunteer for a few months at a Psychiatric Hospital in India**, through the Minds for Health organisation over the summer. If I don't manage to get onto the doctorate I will take a year out to gain as much relevant experience as possible as well as to do some more travelling! So whatever the outcome, an exciting year awaits.

### **Charmaine Eng**

I'm going to take a year off to focus on getting relevant experience before applying to a **Masters in Clinical Psychology** at a university back in Singapore. I've always been really interested in clinical psychology and really want to get relevant training for practice.

### **Becky Gibb**

I am hoping to get work experience **working with children with special needs** or mental health problems.

### **Elena Groß**

I'm applying for a **clinical masters** in Germany (which is 2 years long). Not sure if they will accept me though, it's tough to get in... 3 reasons for applying: Clinical Psychology will give me a rather safe job in Germany, the master course is free and I haven't found any clinical master courses in England, plus I don't want to fight for funds for doing research the rest of my life.

### **Ophelia Groth**

This summer I am doing a 4-week intensive course to **become an English teacher for adults abroad**. Hopefully I'll spend a year or two teaching overseas - wherever the wind blows me, really - and gain some cross-cultural experience. After that, I ideally want to do an **MRes in Psychology** as I believe that research and academia could be my calling.

### **Cheyann Heap**

Hopefully starting the **Doctorate in Clinical Psychology at the University at Hull**. Failing that, concocting some creative plan to combine charity work and mental health work! For example working in counselling or therapy for people affected by issues in developing countries such as HIV/AIDS, disability and war.

### **Ciara Higgins**

I have a place to for a **primary PGCE at MMU** to become a primary school teacher. I hope to keep my options open and possibly become higher in the school or go into education psychology.

### **Jess Holmes**

I have a conditional offer for the **MSc in Applied Forensic Psychology** course at York next year. I'm doing it because I find it really interesting and because I want to practice in the field, so an MSc is the next step on a long road to qualifying.

### **Rachel Kirmond**

First I am planning on taking a year out and will be transferred to Newcastle with a company that I am already working with called Neupartners. The company provides support for people with neurological, mental health problems or disabilities (learning or physical). I will then be applying to do an accelerated **MSc (pre-reg) physiotherapy** course.

### **Sara Lord**

I have an offer for the **MSc cognitive neuroscience** next year at York. I want to do it because I find it really interesting and I might want to do a PhD.

### **Brendan Norman**

I want to be an astronaut.

### **Jo Paterson**

I am going to be **health care worker** at Stockton Hall, a psychiatric hospital in York, to gain the experience I need in order to later apply for the clinical doctorate course.

### **Becky Piclet**

I hope to do **Counselling Psychology**. I've applied for a couple of 'certificate in Counselling' courses for next year, which is necessary to be able to apply for the doctorate in Counselling Psychology course.

### **Roxanne Richards**

I am going to be **teaching Secondary Science with Teach First**. Start this month...not sure where I will be based yet, but find out soon!

### **Emily Shah**

This summer I have a voluntary placement in a psychiatric hospital in India. Afterwards I will be studying for an **MSc in Clinical Neuroscience at King's College London** with the eventual hope of training to become a clinical neuropsychologist.

### **Jenny Shaw**

I'm doing an **internship in a charity** next year that is based in York. Basically, they go into schools and do assemblies and lessons to tell children about Christianity.

### **Emily Snape**

I want to **work for a charity called IntoUniversity**. It supports 7-18 year olds from disadvantaged backgrounds to get a university place or achieve their chosen aspiration by planning and delivering the IntoUniversity programme of academic support, mentoring and specially-devised study weeks and days.

### **James Strachan**

**Cognitive Neuroscience MSc** at York.

### **Danii Thomas**

I'm going to take a year out to help **organise the student work at my church**. This will give me time to re-energise before doing my masters!





**PsychOut 2012**