

# Autumn Edition

Volume 3

Issue 1



# ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the traditional custodians of the Macquarie University land, the Wallumattagal clan of the Dharug nation, whose cultures and customs have nurtured and continue to nurture this land, since the Dreamtime. We pay our respects to Elders past, present and future.

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# PUBLICATIONS TEAM WELCOME



Hey psych enthusiasts!

We are so excited to present the first issue of The Psych Analyst of the year! This issue has seen students working hard to bring you a wide range of compelling articles, each underpinned by a breadth of contemporary research. It is our hope that this issue will bring you all some fresh perspectives and renewed enthusiasm for evidence-based research. We are also thrilled to present our first ever interview with an organisational psychologist here at MQU - Dr Narelle Hess. Starting on page 20, Dr Hess presents fascinating and valuable insights from her journey in organisational psychology so far.

So grab your favourite hot drink, rug up and enjoy!

*Milena*

PUBLICATIONS DIRECTOR - MILENA SHVEDOVA

Hello!

I'd like to warmly welcome you to our first volume of The Psych Analyst for 2022. As we approach the end of Semester 1, it is my hope that you find the range of psychological research discussed in this issue as exciting and inspiring as I have. Our Autumn Edition is composed of a breadth of fascinating articles that are sure to peak your interest including the Internet's Effects on Memory (page 7). I'm very excited for you to read about Hypnosis, Smoking Cessation, and Reality Shifting in my article on page 11!

All the best for the weeks ahead and happy reading!

*Kayley*



PUBLICATIONS VICE DIRECTOR - KAYLEY ZIELINSKI-NICOLSON



Hey!

Welcome to our first issue of the Psych Analyst for 2022! We are super excited to showcase the hard work of our dedicated writers and editors, who have put together an amazing range of articles. This issue features articles on a huge range of exciting topics with something for everyone. One article I am really excited to present is Gordon's on the psychological effects of space travel (p. 30). Additionally, Graces' article on brain capacity (p. 18) is a really interesting exploration of the myths surrounding brain capacity as well as outlining the research surrounding this topic. We hope you enjoy this issue of Psych Analyst.

*Lucas*

PUBLICATIONS OFFICIAL - LUCAS SACH

Hey there!

Welcome to the third volume of The Psych Analyst! I hope you've all enjoyed your first session, and are ready to dive into some lovely Psychology content from our writers and editors. A particular favourite of mine offers advice on how to best learn a foreign language (page 2), goodness knows I could use it.

So feel free to kick your feet up, grab a warm coffee, and see what you learn. Hope you enjoy!

*Darren*



PUBLICATIONS OFFICIAL - DARREN ROSS

# Excusez-moi:

## How to Best Learn a Foreign Language

Australia is considered a multicultural country, and hosts citizens from across the globe. However, the 2016 Australian census data records that only 22.2% of households spoke a non-English language compared to the 72.7% of English-speaking households (Australian Bureau of Statistics, 2022). The data provided suggests that very few households speak a language other than English at home. So, while in Australia we view ourselves as multicultural, we still miss that element of communication required to talk to people across the globe in their native tongue. For example, the European Union Survey found that 64.6% of EU citizens aged 25-64 speak one or more foreign languages, this number rises to 80% when only looking at citizens with a tertiary education (Eurostat, 2021). Fortunately, there are strategies to learning foreign languages, as well as benefits for one's health and communication ability.

*Written by Sophie Doherty*

*Edited by Joshua Zaid*



There are many benefits to learning a foreign language that can justify why someone would want to put in the effort despite being a native English speaker. Aside from being able to communicate more globally, learning a foreign language can benefit creativity, memory, and happiness (Geva & Ryan, 1993; Ghonsooly & Showqi, 2012; Klimova & Pikhart, 2020). According to Ghonsooly and Showqi (2012), foreign language learning has been found to increase creative thinking in four dimensions: fluency, elaboration, originality and flexibility.



Furthermore, a strong relationship has been found between knowing a second language and higher-level cognitive processes, which include an increased memory capacity for memory storage (Geva & Ryan, 1993). Moreover, a correlation between foreign language learning and increased wellbeing and socialising was found in healthy seniors (Klimova & Pikhart, 2020). As the studies demonstrate, the benefits of learning a foreign language are greater than solely communication.

Before learning a language, it's important to know the elements that constitute language. Language consists of phonetics and phonology, which are the sounds of a language, as well as morphology and syntax, which are the words and words elements of the language (Thomas & Cook, 2005). Thomas and Cook (2005) also list semantics and pragmatics as important language elements, which are the literal and contextual meanings of words and language. Any language learning strategy requires these elements to be built upon, to better communicate with native speakers of your target language.



Languages can be learned through a variety of strategies including social and affective techniques as well as using cognitive and metacognitive methods (Chang & Liu, 2013). Social strategies include elements of learning from others, whilst affective strategies manage your own traits. Metacognitive strategies for language learning are about finding resources and planning activities, compared to cognitive strategies of processing and analysing information about your target language. Moreover, Chang and Liu (2013) also indicate the importance of memory targeted strategies, which include connecting and memorising information, and compensatory strategies which target finding and adjusting knowledge gaps. Whilst each strategy is useful, Yang and Wu (2015) suggested that using a combination of strategies was the most effective method of language learning. Furthermore, it is important to use language learning strategies to work towards being a self-directed learner (Vance, 1999).

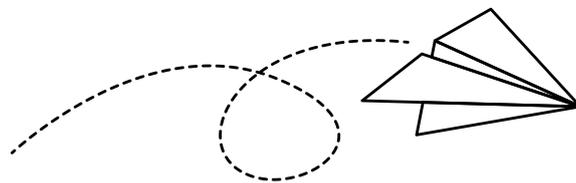
One important aspect required to become a self-directed language learner is motivation (Vance, 1999). Second language learning motivation theory suggests that there are four unique motivations that someone may have to learn a language: need, instrumentality, equity, and reinforcement (Oxford & Shearin, 1994). Need theories explore the satisfaction of your hierarchy of needs, work, and fear of failure (Oxford & Shearin, 1994). Instrumentality theories discuss the expectancy-value and goal setting implications of learning a language (Oxford & Shearin, 1994). Equity theories establish the effort vs outcome motivation while reinforcement theories establish how rewarding the experience of language learning is (Oxford & Shearin, 1994). Establishing your motivation for learning a language allows you to maintain language learning.

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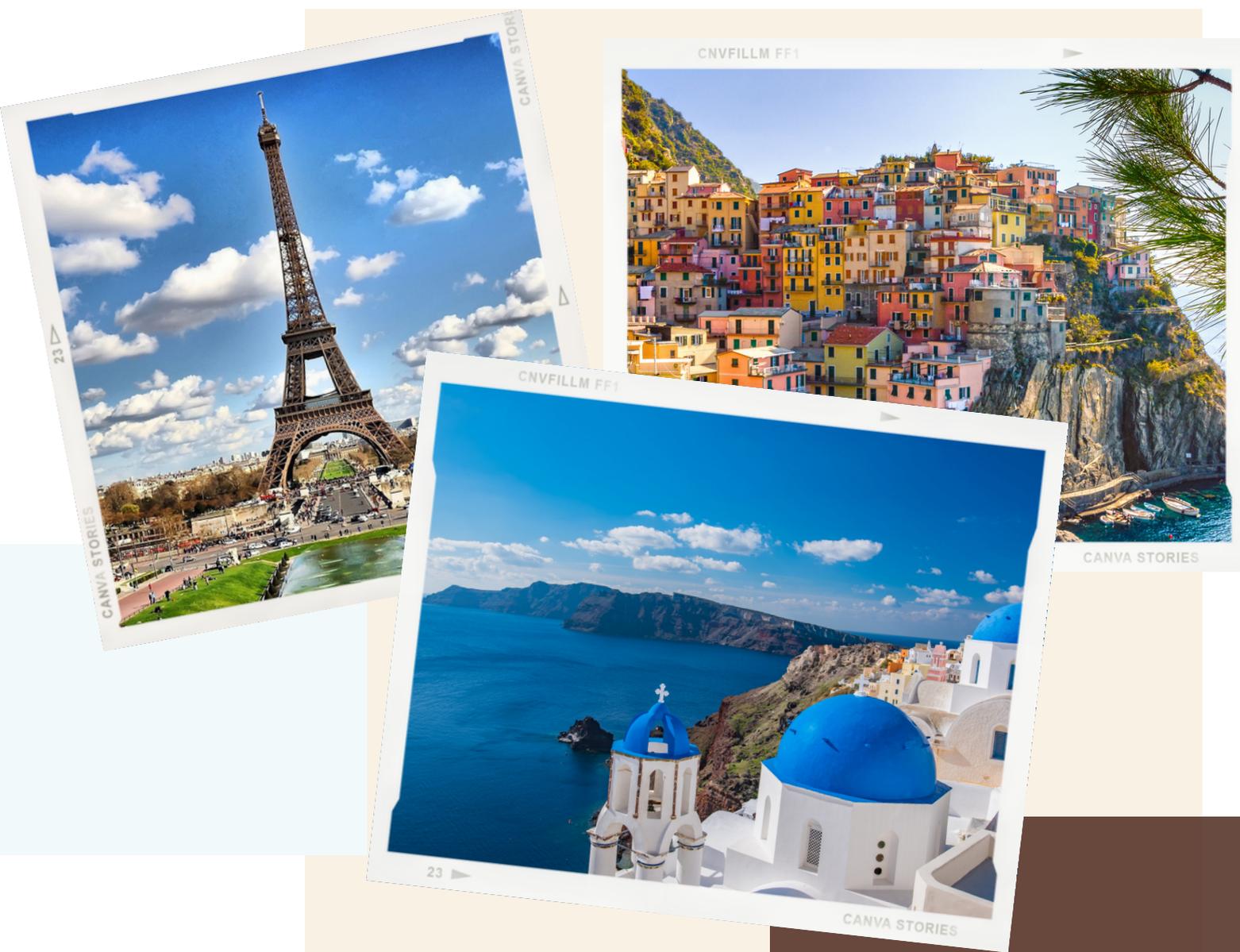
The use of language learning strategies is correlated with an individual's level of motivation (Chang & Liu, 2013). Moreover, higher levels of motivation are correlated with better choice of language learning strategies (Chang & Liu, 2013; Oxford, 1994; Oxford & Nyikos, 1989; Yang & Wu, 2015). Due to the correlation, motivation is considered to be an integral part of language learning (Chamot et al., 1987). Furthermore, motivation impacts how active someone is in learning a language (Oxford & Nyikos, 1989). To be a good language learner is to rely on aptitude, motivation, and opportunity; the motivation to communicate with others should be a driving factor in any given opportunity (Rubin, 1975). While some specific strategies for learning a language may be better than others, without motivation it will be significantly harder to find useful strategies. Therefore, when deciding whether you want to learn a foreign language, think about motivations for learning your target language (Oxford & Shearin, 1994).





Learning a foreign language is an important skill often neglected by native English speakers, such as in Australia (Australian Bureau of Statistics, 2022). However, as evidenced, learning a foreign language has many cognitive and social benefits and opens many opportunities for individuals (Geva & Ryan, 1993; Ghonsooly & Showqi, 2012; Klimova & Pikhart, 2020). Fortunately, there are several strategies that assist in learning a foreign language, however, using a mixture of strategies is ideal for optimal learning (Chang & Liu, 2013; Yang & Wu, 2015). Moreover, despite the use of strategies, motivation is found to be one of the most important factors in language learning competency (Chang & Liu, 2013; Oxford & Nyikos, 1989; Oxford & Shearin, 1994; Yang & Wu, 2015). So, if you're planning to learn a foreign language it may be important to think about what your motivation is and why you want to learn a language.

Now if you'll excuse me, I need to get back to my Italian lesson so I can learn to speak with my nonna!





## References

- Australian Bureau of Statistics. (2022). 2016 *Census QuickStats*.  
[https://quickstats.censusdata.abs.gov.au/census\\_services/getproduct/census/2016/quickstat/036#cultural](https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/036#cultural)
- Chamot, A. U., O'Malley, J. M., Küpper, L., & Impink-Hernandez, M. (1987). A study of learning strategies in foreign language instruction: First-year report. *InterAmerica Research Associates*.  
<https://files.eric.ed.gov/fulltext/ED352824.pdf>
- Chang, C.-h., & Liu, H.-j. (2013). Language Learning Strategy Use and Language Learning Motivation of Taiwanese EFL University Students. *Electronic Journal of Foreign Language Teaching*, 10(2), 196-209.
- Eurostat. (2021). *Foreign language skills statistics*. Statistics Explained.  
[https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Foreign\\_language\\_skills\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Foreign_language_skills_statistics)
- Geva, E., & Ryan, E. B. (1993). Linguistic and Cognitive Correlates of Academic Skills in First and Second Languages. *Language Learning*, 43(1), 5-42. <https://doi.org/10.1111/j.1467-1770.1993.tb00171.x>
- Ghonsooly, B., & Showqi, S. (2012). The Effects of Foreign Language Learning on Creativity. *Canadian Center of Science and Education*, 5(4), 161-167. <https://doi.org/doi:10.5539/elt.v5n4p161>
- Klimova, B., & Pikhart, M. (2020, 2020-April-21). Current Research on the Impact of Foreign Language Learning Among Healthy Seniors on Their Cognitive Functions From a Positive Psychology Perspective—A Systematic Review [Systematic Review]. *Frontiers in Psychology*, 11.  
<https://doi.org/10.3389/fpsyg.2020.00765>
- Oxford, R. (1994). Language Learning Strategies: An Update. *ERIC Digest*.  
<https://files.eric.ed.gov/fulltext/ED376707.pdf>
- Oxford, R., & Nyikos, M. (1989). Variables Affecting Choice of Language Learning Strategies by University Students. *The Modern Language Journal*, 73(3), 291-300. <https://doi.org/10.2307/327003>
- Oxford, R., & Shearin, J. (1994). Language Learning Motivation: Expanding the Theoretical Framework. *The Modern Language Journal*, 78(1), 12-28. <https://doi.org/10.2307/329249>
- Rubin, J. (1975). What the "Good Language Learner" Can Teach Us. *TESOL Quarterly*, 9(1), 41.  
<https://doi.org/10.2307/3586011>
- Thomas, J. J., & Cook, K. A. (Eds.). (2005). *Illuminating the Path: The Research and Development Agenda for Visual Analytics*. National Visualization and Analytics Center.  
[https://ils.unc.edu/courses/2017\\_fall/inls641\\_001/books/RD\\_Agenda\\_VisualAnalytics.pdf](https://ils.unc.edu/courses/2017_fall/inls641_001/books/RD_Agenda_VisualAnalytics.pdf)
- Vance, S. J. (1999). *Language Learning Strategies: Is There a Best Way To Teach Them?*  
<https://files.eric.ed.gov/fulltext/ED438716.pdf>
- Yang, F.-C. O., & Wu, W.-C. V. (2015). Using Mixed-Modality Learning Strategies via e-Learning for Second Language Vocabulary Acquisition. *Journal of Educational Technology & Society*, 18(3), 309-322.  
<http://www.jstor.org/stable/jeductechsoci.18.3.309>





# JUST GOOGLE IT:

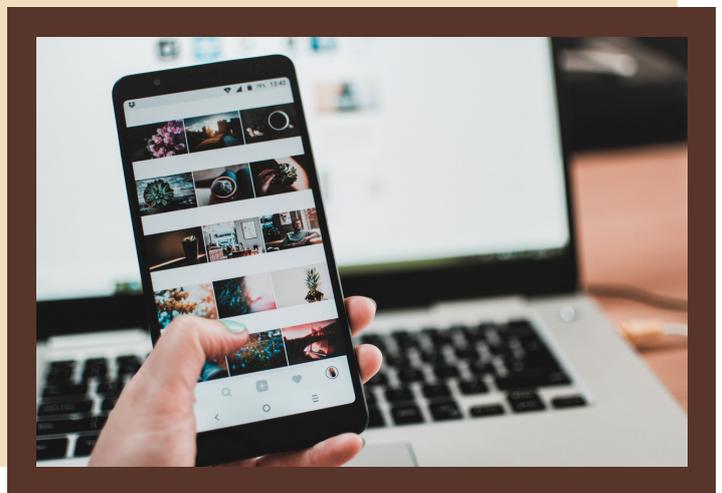
## Considering the Internet's Effects on Memory

*Written by Ronan King*

*Edited by Morgan A. Smith*

Rapid technological innovation and its impact on cognition have long been a concern amongst psychologists, philosophers, and critical thinkers (Loh & Kanai, 2016). As technology develops, we appear to develop alongside it, and our behaviours are shaped by the new tools and devices we utilise. As we strive to study human behaviour accurately, we must question how learning and living with such technologies eventuate in different cognitive processes, behaviours, and summative outcomes when compared with individuals who grew up with more primitive technologies. The literature and conceptual models concerning cognitive processes must remain contemporary in the context of such technological advancements, too, so that our understanding remains relevant and accurate. Prevalent in recent research is the investigation into the effects of a specific technology on one such cognitive process: The internet and memory.

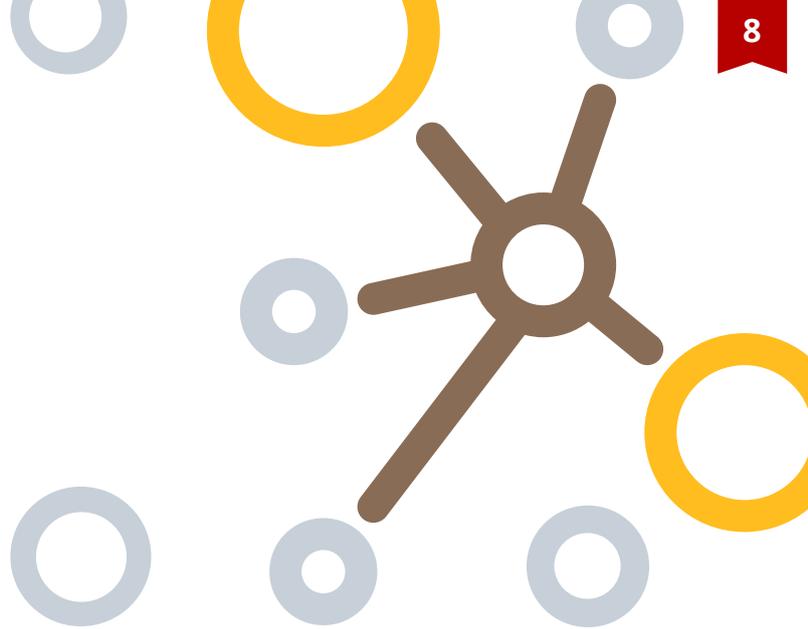
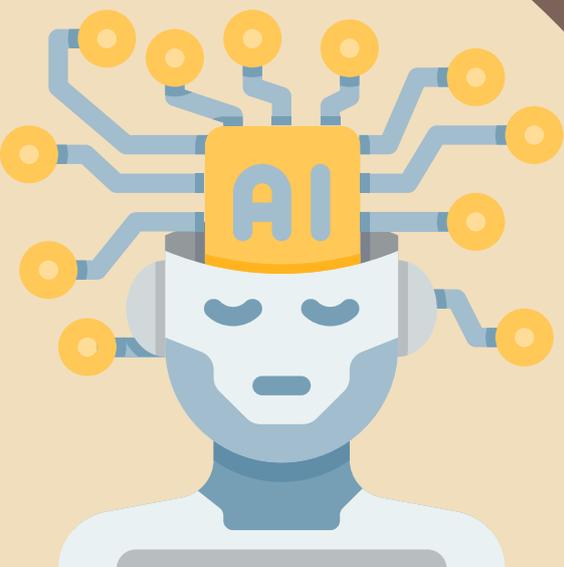
If we consider the impacts of technologies, such as the internet, on memory in a historical context, the importance of further investigation becomes clearer. Long before the printing press, individuals spread knowledge through the 'oral tradition' (Foley, 2022). During this process, an individual would first hear information from another, or learn through personal experience. Following this, they would have to memorise the information to recite and spread it to further parties. The critical point of difference here is the location within which knowledge is historically stored and accessed: one's own memory. Rather than accessing information in a library or on the internet, individuals had to remember it themselves – there was no alternative!



Following the invention and widespread adoption of the internet, knowledge could be dumped in a highly accessible format and accessed almost universally. Nowadays, we do not have to rely on our own memory to source information; smart devices sitting in our pockets store it for us. So, what are the consequences of this for our own memory?

Some argue that the internet and, in relation, smart devices with internet access function as a transactive memory source (Barr et al., 2015; Marsh & Rajaram, 2019; Sparrow et al., 2011). According to transactive memory theory, the mental memory systems of multiple individuals collaborate to encode, store and retrieve information via social communication. This is the essential concept behind transactive memory systems. As a result, an interconnected, group-dependent, collaborative, and external memory store that is transactive in nature is formed (Wegner, 1987). In this arrangement, a member of a transactive memory system would remember where to access information rather than the information itself. For example, one would remember who within their transactive memory system knew the fact and could ask them to recall said fact as needed instead of remembering it themselves. When we consider transactive memory theory in the context of the internet, it is not too difficult to identify some glaring similarities.

In their seminal 2011 study, Sparrow et al. investigated whether the internet functioned as a form of transactive memory source built upon digital collaboration. Their lab-based experiment indicated that, following a digital information saving exercise, participants who believed that information would be saved and stored digitally performed far poorer in a recall task than participants who believed information would not be saved. Their findings suggest that individuals may encode information found on the internet to a shallower level as they know it will be accessible later (Sparrow et al., 2011). Storm et al.'s 2016 follow up study conducted a similar experiment investigating if successfully using an internet search browser would increase the likelihood of doing so to find information in the future. They found that one's successful prior experience using the internet to source information strengthened the likelihood of future use. Our cognitive behaviour may be in line with the notion that the internet remembers information so that we do not have to!

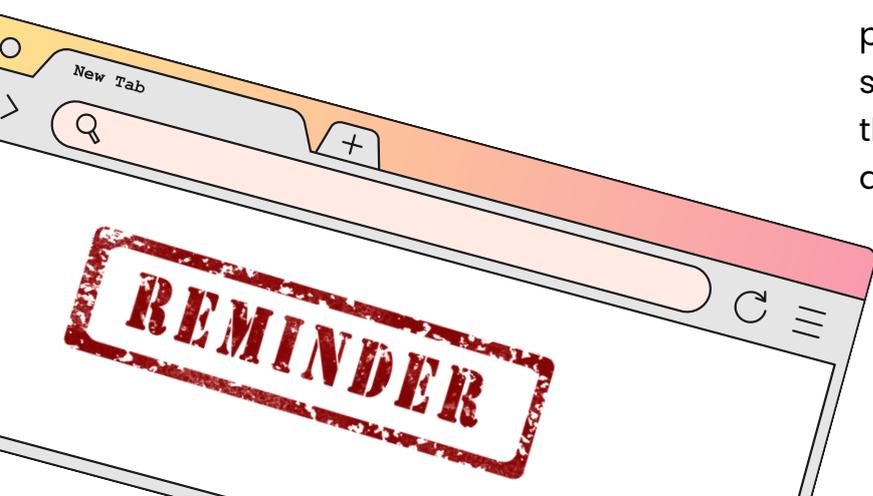




Whether or not the internet functions as a form of transactive memory source or if it has a beneficial or degradative impact on memory is not definitive from these findings; however, they do propose some interesting points. Firstly, as discovered in Storm et al.'s 2016 study, in knowing that something will be saved in a specific location and knowing that we can reference the saved information in the future, it appears that we are less likely to remember the information ourselves (Storm et al., 2016). This may provide some weight to the notion that we are less likely to remember information as we know it is easily accessible on the internet. Additionally, as found by Sparrow et al.'s study, we may grow conditioned to rely on the internet rather than our own recall (Sparrow et al., 2011).

While the current research is inconclusive in determining if the internet functions as a transactive memory source, we may entertain a few possible consequences. Firstly, utilising the internet as a transactive memory source allows us to offload non-essential information. This is a potential benefit of saving our own memory for details of greater importance (Nairne & Pandeirada, 2008). Essentially, the internet 'remembers' the trivial information so that we do not have to! Contrastingly, a potential negative is the degradation of one's own personal memory and the rife inaccuracy of much "false news" and internet misinformation which may cloud valid knowledge (Marsh & Rajaram, 2019).

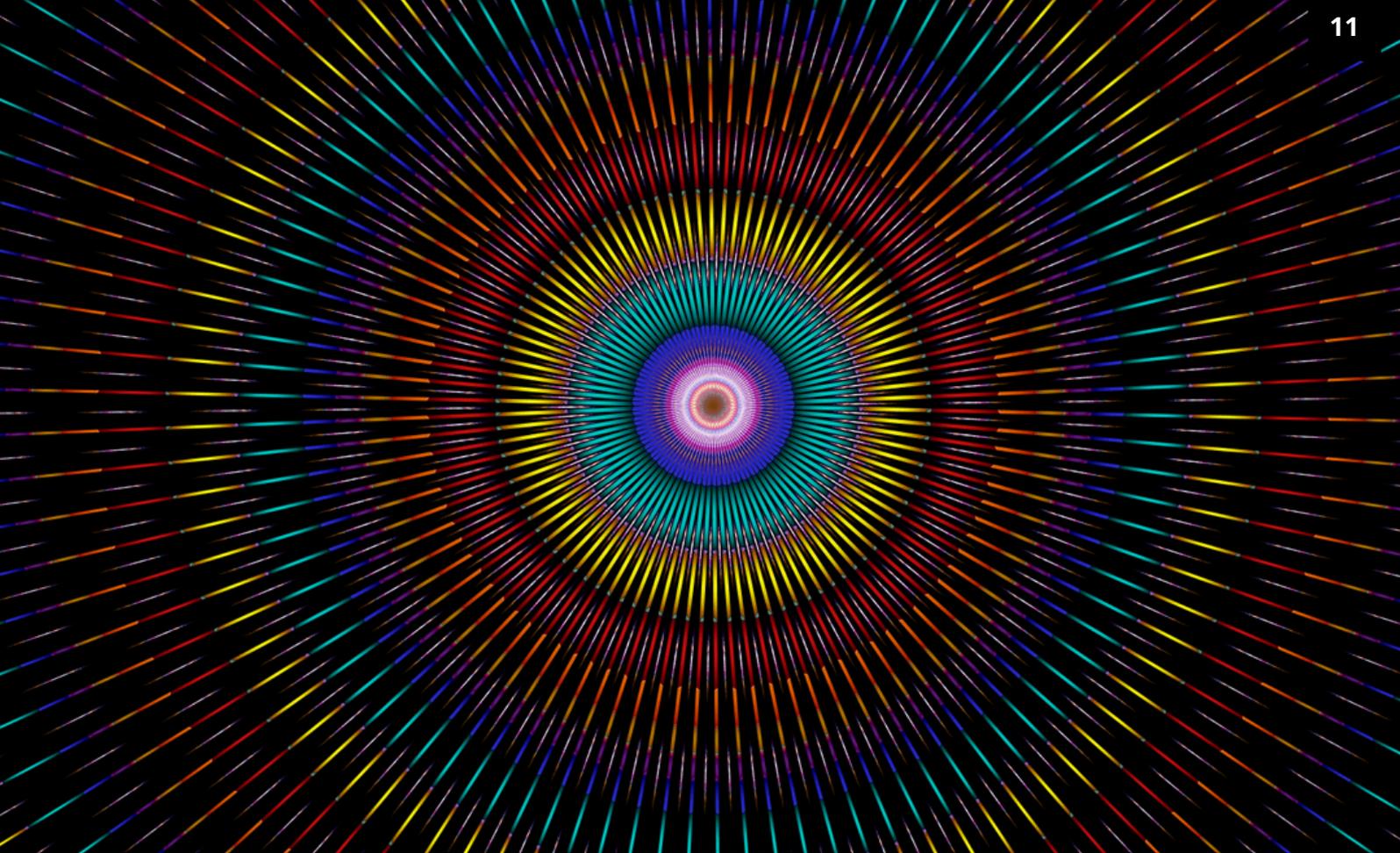
Despite this, we must consider a question of greater importance: Is it necessarily a bad thing if the internet truly functions as a transactive memory source? What is the problem with us offloading information and using tools like the internet to our advantage? How is it any different to sourcing information from a library? And ultimately, should transactive memory sources be designated functional positions in future memory models (King, 2021)? After all, as mentioned earlier, the literature and conceptual models concerning cognitive processes must remain contemporary in such technological advancements so that our understanding remains relevant and accurate.



## References

- Barr, N., Pennycook, G., Stolz, J., & Fugelsang, J. (2015). The brain in your pocket: Evidence that Smartphones are used to supplant thinking. *Computers in Human Behavior, 48*, 473-480. <https://doi.org/10.1016/j.chb.2015.02.029>
- Foley, J. (2022). *Oral Tradition | communication*. Encyclopedia Britannica. Retrieved 16 April 2022, from <https://www.britannica.com/topic/oral-tradition>.
- King, R. (2021). Total Recall: The Impacts of Internet Usage on Memory in Young Adults [Unpublished manuscript]. Macquarie University.
- Loh, K., & Kanai, R. (2016). How has the internet reshaped human cognition? *The Neuroscientist, 22*(5), 506-520. <https://doi.org/10.1177/1073858415595005>
- Marsh, E., & Rajaram, S. (2019). The digital expansion of the mind: Implications of Internet usage for memory and cognition. *Journal of Applied Research in Memory and Cognition, 8*(1), 1-14. <https://doi.org/10.1016/j.jarmac.2018.11.001>
- Nairne, J., & Pandeirada, J. (2008). Adaptive Memory. *Current Directions in Psychological Science, 17*(4), 239-243. <https://doi.org/10.1111/j.1467-8721.2008.00582.x>
- Sparrow, B., Liu, J., & Wegner, D. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *Science, 333*(6043), 776-778. <https://doi.org/10.1126/science.1207745>
- Storm, B., Stone, S., & Benjamin, A. (2016). Using the internet to access information inflates future use of the internet to access other information. *Memory, 25*(6), 717-723. <https://doi.org/10.1080/09658211.2016.1210171>
- Wegner, D. (1987). Transactive Memory: A contemporary analysis of the group mind. *Theories of Group Behavior, 185-208*. [https://doi.org/10.1007/978-1-4612-4634-3\\_9](https://doi.org/10.1007/978-1-4612-4634-3_9)





# Mind Control or Relaxation?

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## What is Hypnosis?

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*By Kayley Zielinski-Nicolson*

One of the first associations when you hear the word 'hypnosis' may be the image of a swinging pendulum, a swirling monochrome spiral, or a super villain attempting to assert mind control over unwilling minions. This Hollywoodized construct may make hypnosis seem like nothing more than a fantastical fictional plot-device. In fact, hypnosis is actually a genuine psychological phenomenon with several useful real world applications.

**Hypnosis** is an established therapeutic method used to treat a broad range of physical and mental health conditions such as mood disorders, anxiety, and pain (American Psychological Association, 2022).

**Hypnotherapy** may even be used to change challenging habits and treat addictions (American Psychological Association, 2022).

**Hypnotisability** refers to changes in suggestibility during hypnotic induction (Zahedi & Sommer, 2022).

## Hypnotic Induction

Hypnosis involves a set of procedures guided by a clinician or hypnotist who makes suggestions to the subject who experiences changes in perception, sensation, cognition and control of physical motor behaviours as a result (Kirsch et al., 1993). Hypnosis is typically composed of an induction phase and an application phase. The majority of induction techniques involve instructing the subject to deeply relax, as this appears to be a critical aspect of hypnosis (Kirsch et al., 1993). For example, a basic induction may start like this...



"Please make yourself comfortable. Close your eyes and let yourself relax. Take a few slow deep breaths and notice that as you exhale, you can feel yourself becoming more relaxed. You can continue to relax, as I speak to you . . ."  
(Kirsch et al., 1993, p. 12).



Once the subject is in a hypnotised state, the hypnotist will engage the application phase which involves posthypnotic suggestions (Kirsch et al., 1993). While this may actually sound somewhat similar to what you may have seen in movies, hypnosis is actually associated with a range of positive outcomes. Helpful posthypnotic suggestions typically include ego enhancement, relaxation, and a state of mastery (Kirsch et al, 1993). Specifically, this feeling of mastery can be replicated in everyday situations on cue which has extensive applications including stopping a range of addictive behaviours (Kirsch et al, 1993).

## Hypnotisability

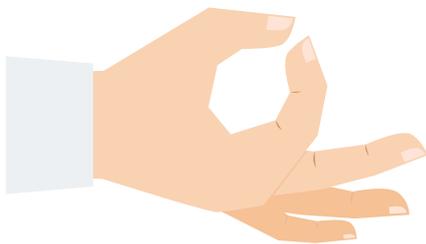
In fact, you are likely to possess the ability to be hypnotised. Specifically, there is substantial empirical evidence suggesting that about 75% of the population are susceptible to hypnosis (Surman & Baer, 2008). Those in this group tend to respond to some but not all hypnotic suggestions such as motor related suggestions (Cox & Barnier, 2010). Examples of motor suggestions include heaviness or rigidity in limbs (Cox & Barnier, 2010). There's also a chance that you are highly hypnotisable like 10% - 15% of the population (Surman & Baer, 2008).



Those who are highly hypnotisable report a range of motor and cognitive experiences in response to suggestions under hypnosis (Dienes et al., 2009). For example, hypnotised subjects may experience positive and negative hallucinations such as hearing music in a silent room or not seeing stimuli that is present upon the suggestion of the hypnotist (Dienes et al., 2009). Other suggestions may cause highly hypnotisable subjects to experience partial paralysis, selective amnesia, and pain reduction of clinically significant degrees (Dienes et al., 2009). Alternatively, you may be a part of the 15% - 20% of people who possess low hypnotisability which means they respond to hypnotic suggestions rarely or never (Surman & Baer, 2008).



## Hypnotherapy for Quitting Smoking



A common example of hypnosis in practice is its use in quitting smoking (American Psychological Association, 2022; Kirsch et al., 1993). This involves creating negative associations with the addictive behaviour - smoking cigarettes - and positive associations with the replacement behaviour - touching together the forefinger and thumb - when in a hypnotised, deeply relaxed state (Kirsch et al., 1993). As a result, when the subject is going about everyday life and has the urge to smoke, they will experience aversive negative feelings (Riegel, 2013). Instead of smoking, the subject then engages in the replacement behaviour which induces positive feelings including a sense of mastery (Kirsch et al., 1993). Importantly, both empirical and neurological research has demonstrated that this hypnotherapy approach is useful in quitting smoking (Li et al., 2019; Riegel, 2013). Therefore, hypnosis appears to be both an interesting phenomenon and useful therapeutic tool.

## Reality Shifting

There's a good chance that you've come across the 'Reality Shifting' phenomena that has dramatically expanded in online popularity since 2020 (Somer et al., 2021). Reality shifting is often described as a highly immersive experience of an alternative reality (Somer et al., 2021). These alternative realities seem to typically involve popular fictional universes from movies, television shows, books and video games (Somer et al., 2021). The goal of reality shifting is often described as a temporary escape from ordinary life where the 'shifter' engages with their favourite fictional characters (Somer et al., 2021). Interestingly, these experiences are described as extremely vivid, often referring to sensory perception comparable to that of everyday life (Somer et al., 2021).

While several theories circulate online as the basis for these experiences, the scientific investigation into these experiences is in its infancy. Currently there is only one peer-reviewed research article examining this phenomenon. This preliminary research has identified that reality shifting appears to be a mental activity that may be related to hypnosis (Somer et al., 2021). Specifically, alternative consciousness experiences and methods for achieving reality shifting appear to parallel those typical of hypnotic practice (Somer et al., 2021).



These parallels include the use of relaxation induction methods and detailed 'scripts' outlining the experience to be had in the alternate reality which appear similar to suggestions used in hypnotic practice (Somer et al., 2021). Additionally, there appears to be individual difference in the ease of engaging in reality shifting and the type of experiences had, which parallels hypnotic susceptibility prevalence previously discussed (Somer et al., 2021). Therefore, reality shifting may be considered a unique form of self-hypnosis, despite some contextual and experiential differences between the two phenomena (Somer et al., 2021). It will be really interesting to see what this new research avenue discovers in the future!

Overall, hypnosis is a scientifically and clinically established phenomena with an extensive number of therapeutic and potentially entertainment related applications. Although scientific investigation into reality shifting has only just begun, this also means that it is an exciting time to be investigating it - so stay on the lookout for new scientific hypnosis and reality shifting findings!





## References

- American Psychological Association. (2022, April 4). *Hypnosis*. Retrieved from American Psychological Association: <https://www.apa.org/topics/hypnosis>
- Cox, R. E., & Barnier, A. J. (2010). Hypnotic illusions and clinical delusions: Hypnosis as a research method. *Cognitive neuropsychiatry*, *15*(1-3), 202-232. <https://doi.org/10.1080/13546800903319884>
- Dienes, Z., Brown, E., Hutton, S., Kirsch, I., Mazzoni, G., & Wright, D. B. (2009). Hypnotic suggestibility, cognitive inhibition, and dissociation. *Consciousness and Cognition*, *18*(4), 837-847. <https://doi.org/10.1016/j.concog.2009.07.009>
- Kirsch, I., Lynn, S. J., & Rhue, J. W. (1993). *Introduction to clinical hypnosis*. American Psychological Association.
- Li, X., Chen, L., Ma, R., Wang, H., Wan, L., Bu, J., Hong, W., Lv, W., Yang, Y., Rao, H., Zhang, X. (2019). The neural mechanisms of immediate and follow-up of the treatment effect of hypnosis on smoking craving. *Brain Imaging and Behavior*, *14*(5), 1487-1497. <https://doi.org/10.1007/s11682-019-00072-0>
- Riegel, B. (2013). Hypnosis for smoking cessation: Group and individual treatment-A free choice study. *International Journal of Clinical and Experimental Hypnosis*, *61*(2), 146-161. <https://doi.org/10.1080/00207144.2013.753824>
- Somer, E., Cardeña, E., Catelan, R. F., & Soffer-Dudek, N. (2021). Reality shifting: psychological features of an emergent online daydreaming culture. *Current Psychology*, 1-13. <https://doi.org/10.1007/s12144-021-02439-3>
- Surman, O. S., & Baer, L. (2008). Hypnosis. In *Massachusetts General Hospital comprehensive clinical psychiatry* (pp. 183-188). Elsevier. <https://doi.org/10.1016/B978-0-323-04743-2.50017-2>
- Zahedi, A., & Sommer, W. (2022). Can hypnotic susceptibility be explained by bifactor models? Structural equation modeling of the Harvard group scale of hypnotic susceptibility – Form A. *Consciousness and Cognition*, *99*, 103289. <https://doi.org/10.1016/j.concog.2022.103289>

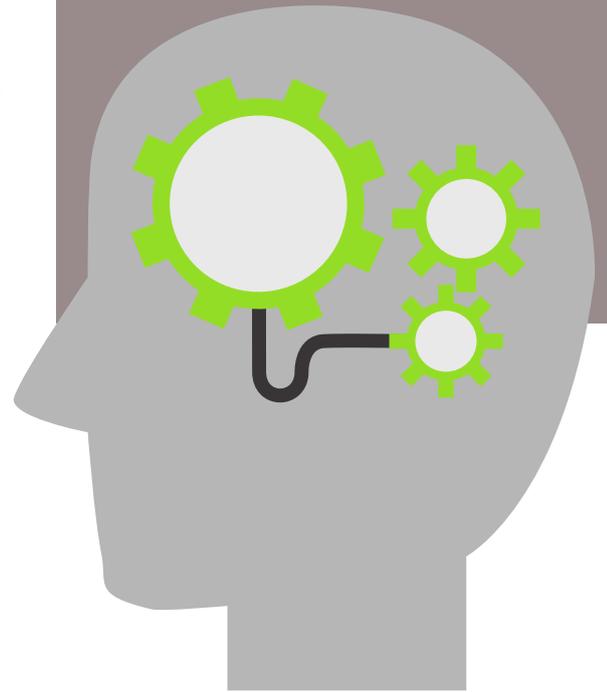
# 10% Brain Capacity?

## *A Long-Lived Neuromyth*

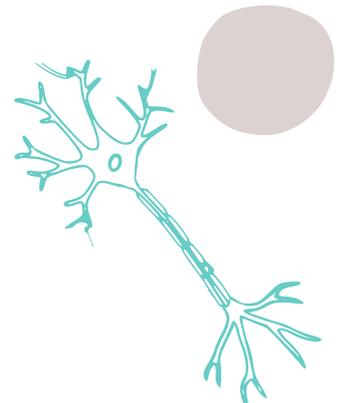
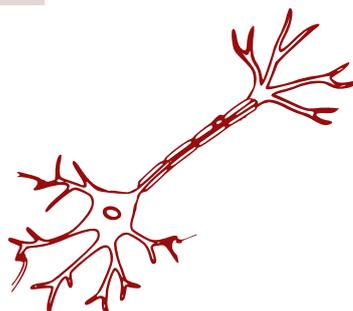
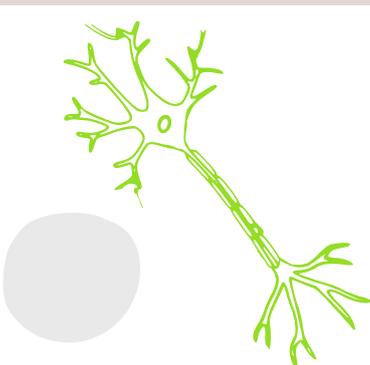
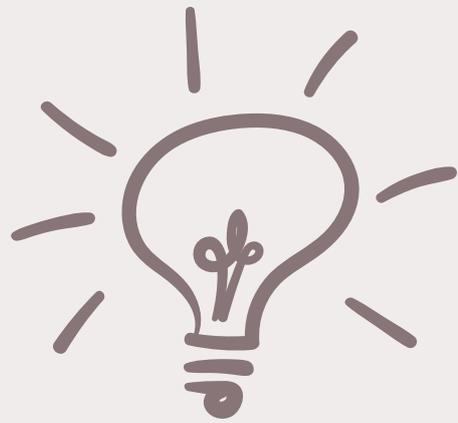
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In 2014, the science fiction action film 'Lucy' was released. Between Scarlett Johansson's graphic fight scenes and Morgan Freeman's two-hour bio-philosophy lecture, audiences were left with the enthralling yet unfounded belief that humans only ever use 10% of their brains. As Lucy's brain progresses towards 100%, she develops the abilities of telekinesis, accelerated learning, control of time and control of consciousness (Beeson, 2014).

13-year-old me believed this to be plausible (perhaps this influenced my academic ventures...). On a basic and satirical level, this theory can be refuted using my own experience. Trying to join a zoom call with lagging Wi-Fi feels as though I'm utilising my full cerebral capacity, whilst sitting through statistics lectures makes me wonder if those neural connections exist at all.



***Written by Grace Seaglove***  
***Edited by Campbell Green***



For clarity, the “10% brain capacity” theory is 100% fiction. However, you’re not alone if this is new information. Gaze (2014) discovered that 45% of advanced psychology students endorsed the myth. Similarly, Dekker et al. (2012) found that roughly 50% of teachers, both primary and secondary, supported the idea that we only use 10% of our brain. Concerningly, participants from both studies supported other ‘neuromyths’, many of which have formed the basis of educational practices taught in the classroom.

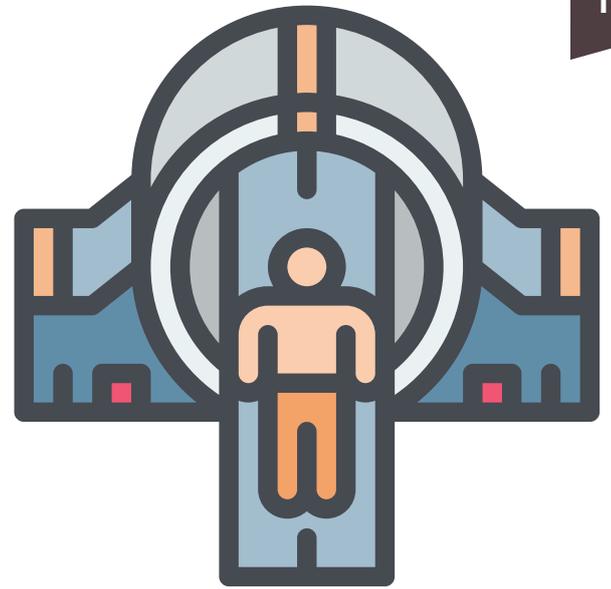
The origin of the 10% brain capacity myth is uncertain, however most literature suggests it was first introduced by the American Psychologist, William James back in 1907 (Emory University, 2014; Jarrett, 2014). To quote James: “Compared with what we ought to be, we are only half awake. Our fires are damped, our drafts are checked. We are making use of only a small part of our possible mental and physical resources” (James, 1907). James does not imply that we only use a portion of our brain, but rather observes how mental energy fluctuates with different stimulations.



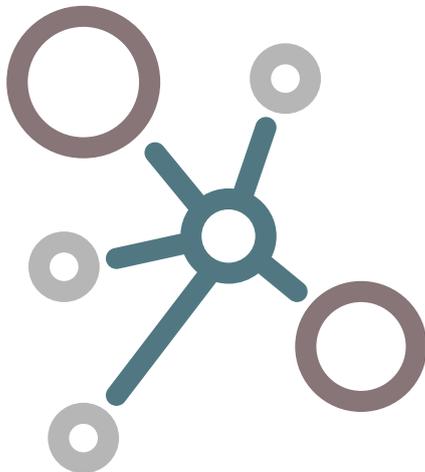
As James’ work continues to be misread, misinterpreted, and misquoted over a century later, the belief that we only use 10% of our brain capacity continues to flourish today. Surprisingly the spreading of this fictitious fact can be attributed to the intellectual community. When members of this community, such as teachers and scientists support neuromyths, it becomes easy for the public to learn vicariously – if these smart people say this is true, it must be. Kalat (1997) supports this flawed reasoning by identifying that neuroscientists in the 20th century were aware of the excessive number of neurons living locally in the brain, however, they knew little about them. Somehow this was correlated with the brain capacity myth, despite having minimal scientific support.



One method used to debunk the 10% theory is to examine the activity of brains using modern technologies. PET (Positron Emission Tomography) scans highlight the spatial resolution of brain activation by injecting a radioactive tracer, usually glucose, into the subjects' bloodstream. As the brain metabolises the tracer, external sensors detect the emission of positrons which are then used to construct a colourful three-dimensional representation of the brain's activity (Medline Plus, n.d.). PET scans have shown that whether you're sleeping, running, arguing with a sibling, or sitting through a statistics lecture (kind of like sleeping), the entire brain remains constantly active, all 100% percent of it (Aiello et al., 2015).



Likewise, fMRI (Functional Magnetic Resonance Imaging) scans can also be used when studying how blood flow and neuronal activity correlate in the brain. This is displayed using a blood-oxygen level dependent (BOLD) contrast. The basic idea is that certain activities target specialised parts of the brain, which ensures optimal activation, as well as energy consumption in that area (Yale Medicine, n.d.). Just like the PET scan, colour-coded graphs show full brain functionality – if there is blood flowing to all areas, the brain will continue to work “colourfully” at its full capacity (Yale Medicine, n.d.).



Back to Lucy. The central message of the film asks the audience to contemplate a simple concept; What happens if she (Lucy) reaches 100%?. When entertaining the possibilities that this question entails, I can only ask that the viewer utilises their own 100% brain capacity to produce a response reasoned by science. As for the circulation of the 10% myth, it seems only appropriate to once again quote William James: “There is nothing so absurd that it cannot be believed as truth if repeated often enough (James, 1907)”.

## References

Aiello M, Salvatore E, Cachia A, et al. (2015) Relationship between simultaneously acquired resting-state regional cerebral glucose metabolism and functional MRI: A PET/MR hybrid scanner study. *NeuroImage* 113: 111–121. DOI: 10.1016/j.neuroimage.2015.03.017 .

Beeson, L. (Director). (2014). *Lucy* [Film]. EuropaCorp; TFI Films Production.

Dekker, S., Lee, N. C., Howard-Jones, P., & Jolles, J. (2012). Neuromyths in education: Prevalence and predictors of misconceptions among teachers. *Frontiers in Psychology*, 3(429), 1–8. <https://doi.org/10.3389/fpsyg.2012.00429>

Emory University. (2014, July 24). *Lucy: Debunking the 10% Brain Myth* [Video]. YouTube. <https://www.youtube.com/watch?v=Tt2dEep9vHA>

Gaze, C. M. (2014). Popular psychological myths: A comparison of students' beliefs across the psychology major. *Journal of the Scholarship of Teaching and Learning*, 14(2), 46–60. <https://doi.org/10.14434/josotl.v14i2.3931>

James, W. (1907). Pragmatism: A new name for some old ways of thinking. *Longmans, Green and Co.* <https://doi.org/10.1037/10851-000>

Jarrett, C. (2014, July 24). All You Need To Know About the 10 Percent Brain Myth, in 60 Seconds. *Wired*. <https://www.wired.com/2014/07/everything-you-need-to-know-about-the-10-brain-myth-explained-in-60-seconds/#:~:text=Thomas%20misquoted%20the%20brilliant%20American,attributed%20his%20intellectual%20giftedness%20to>

Kalat, J. W. (2001). (7th ed.). *Wadsworth/Thomson Learning*.

Medline Plus. (n.d.). Brain PET Scan fact sheet [Fact sheet]. <https://medlineplus.gov/ency/article/007341.htm#:~:text=A%20brain%20positron%20emission%20tomography,and%20its%20tissues%20are%20working>

Solan, M. (2021, October 1). You don't say? Brain space. *Harvard Men's Health Watch*. <https://www.health.harvard.edu/mind-and-mood/you-dont-say-brain-space>

Yale Medicine. (n.d.). Functional MRI of the Brain [Fact sheet]. <https://www.yalemedicine.org/conditions/functional-mri-imaging-the-brain>

## Interview with Dr Narelle Hess

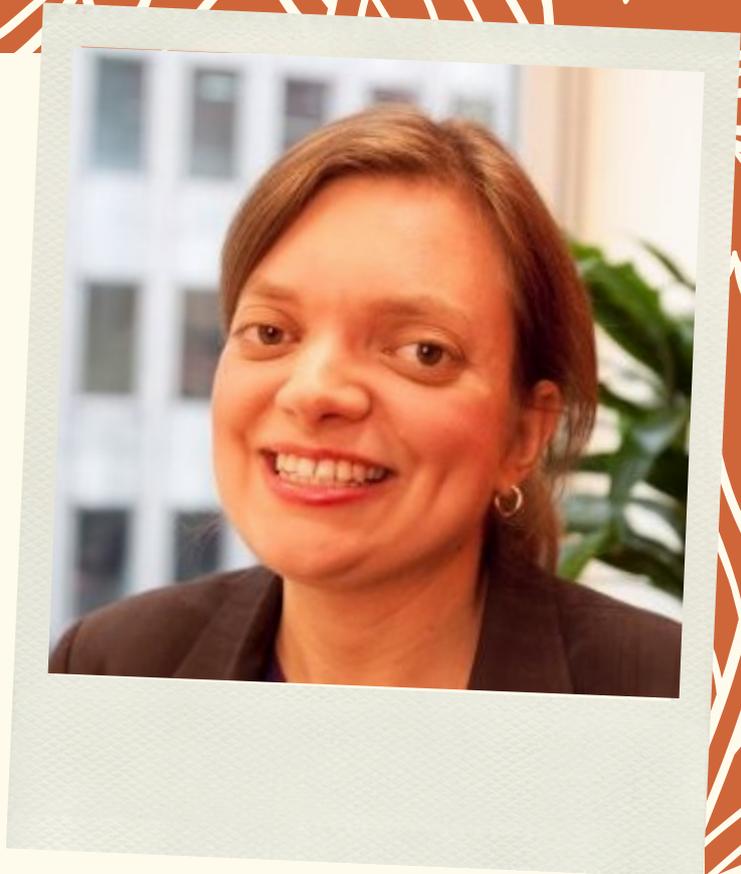
*Conducted by Milena Shvedova*

Dr Narelle Hess is currently a guest lecturer in PSYU3338 here at MQU. She convenes PSYO8915 and PSYP8904, and teaches on PSYO8914 and PSYO8921 in the Master of Organisational Psychology and Master of Professional Psychology. So you may recognise her if you've been through any of these units!

Her key areas of expertise are Career Development, Athlete Career Transitions, and Organisational Career Management.

In her spare time, she enjoys reading (novels), attending live events (sporting and arts) and hanging out with family and friends.

The following interview with Dr Hess is full of valuable insights and advice from her journey in organisational psychology.

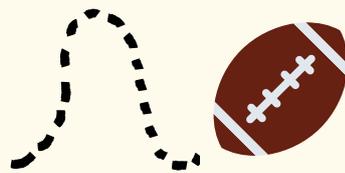


**Milena:** Would you be able to tell me a bit about your journey into organisational psychology?



**Dr Hess:** I, like yourself, and a lot of the other students that will be reading, completed a bachelor's degree majoring in psychology. In my undergraduate studies, I was finding I didn't have as much flexibility in my degree as I would've liked. So, I moved out of the Bachelor of Psychology and into a Bachelor of Science degree. This allowed me to major in sports psychology in my undergraduate studies. Then I was accepted into honours through my grades, so I completed my fourth year.

After my four-year degree, I wasn't yet one hundred percent sure what I wanted to do psychology-wise, so I decided to start work! I applied for graduate roles that wanted a psychology background, and I ended up working in my first role as a recruitment consultant, which was super lucky because I was able to have exposure to different people working across different job roles and organisations.



After a year of working full-time, I decided to continue my psychology studies. I spoke to my honours supervisor, who was a sports psychologist. I was tossing up between doing further studies in Sport Psychology or Organisational Psychology, and she suggested I look at organisational psychology, because a lot of the theories and ideas that you use in sports psychology, you use in organisational psychology as well. So I did, I applied and I was accepted. I completed the Master of Organisational Psychology part-time whilst I was working full-time.

Looking back on my journey to commence the Master of Organisational Psychology, it was about exploring my interests and considering what areas of psychology were of most interest to me. I was really interested in how individuals navigate their lives, but also, from my work as a recruiter, I was really interested in the world of work and how organisations and employers have an impact on individual wellbeing. I wanted to develop a better understanding of the impact of the organisational system on an individual. I also wanted to learn how to motivate teams and individuals, which was aligned to some of the units I completed in my undergraduate studies in sports psychology.



**Milena:** Oh wow! So you've been on quite the journey with all of your studies. Sounds like you definitely put the hard yards into what you were doing.

**Dr Hess:** Yeah! So then, after I completed my masters I worked in organisational psychology consulting, consulting to organisations around the employee life cycle, including selection and assessment, training and development, managing organisational change projects, and supporting individuals navigating career transitions.

After seven years working in consulting, I decided it was time to complete further study. I commenced a PhD and at the same time, I jumped into working in sport. I worked at the Sydney Roosters Football Club supporting athletes in early preparation for their post-sporting life.

So my specialty that I started to navigate towards whilst I was studying my masters but also while I was working in consulting was a keen interest in how people make career choices and how people are supported or not supported in their career development. I think my specialty within organisational psychology navigated towards that area and I used that specialty knowledge and applied it with athletes. Then I studied and researched this area in my PhD.

So in summary, that's been my psychology journey from undergraduate studies to present day.



**Milena:** That sounds like quite the journey, and I do think that a lot of students will find it encouraging to hear that you might not have necessarily known exactly what kind of psychology you wanted to study, even up until your masters decision. It's wonderful to hear from someone who made that decision based on their interests and ended up developing a fruitful career out of it. That is so encouraging to hear!

**Dr Hess:** Good! For me what was helpful was having that chance to explore different career areas. I knew that I wanted to work as a psychologist in some capacity, I just wasn't sure, and I guess I wasn't immediately committed to an additional two years of full-time study after my honour's year. So, taking that year out to develop a better understanding about myself but also about different areas of psychology was really helpful for me to help make an informed decision on my masters studies.

**Milena:** It sounds like it definitely gave you the space to make an informed decision. On that note, for people who haven't explored the avenue before, what is organisational psychology?



**Dr Hess:** That's an excellent question!

If you are interested, I would definitely recommend completing the organisational psych unit (PSYU3338). In this unit, you explore the key organisational concepts and how they relate to the role of the psychologist. I came into the psychology degree with a very narrow understanding of what psychologists were and what they did at work. It was in my undergraduate studies where I started broadening my understanding of what the psychologist's role is and can be.

Organisational psychology is a very broad area as well. Like I said, my specialty ended up being related to career development. But I also worked in selection, I worked in development, I supported organisations navigating organisational change. We also see organisational psychologists work in other areas in terms of mental health and employee wellbeing, as well designing systems and improving processes and user experience.



So, it can be a whole range different avenues you can navigate with a Master of Organisational Psychology. And similar to how I found my niche, you can find your niche whilst you study your masters. During your coursework you will have exposure to a number of different areas of organisational psychology, and then you complete different placements and you have the opportunity to see where your skills and interests best fit. You might consider: Am I somebody who wants to have more engagement one-on-one with people, or would I rather work with teams? Would I rather work with the whole organisational system or just parts of the system? So organisational psychology can have a specialist focus or it can have quite a broad focus. We work in a whole range of different areas to support employees, leaders, and organisations depending on where our focus is.



**Milena:** I think that it's almost more helpful to hear just how broad the realm can be, and how you can afford to find your niche within that wide spectrum of ways that you can employ your organisational psychology research and knowledge. It's encouraging to hear that there are many different ways that you can employ these interests and get excited over niche ideas and areas, so thank you for that!

**Dr Hess:** Absolutely, and I shouldn't forget that a lot of the work psychologists do within organisations is about supporting employee wellbeing and supporting employees in creating systems to improve mental health. I think one of the students I was talking to in an orgpsych class was saying that's what motivates them. So there are certainly avenues within organisational psychology which are in relation to mental health and supporting employee wellbeing as well.

**Milena:** On the topic of finding your niche, are there any areas of research that you're currently involved in that you can tell me more about?

**Dr Hess:** Sure! My PhD research looked at how employees are supported within organisations with their career development.

What I identified from the work in consulting was there were a lot of organisations focusing on career management and talent management of their employees. Yet, what I was seeing in the academic literature was a shift away from organisational career support and more towards individuals navigating their own careers. So, I was intrigued by what I perceived as a paradox or disconnect between individuals managing their careers and organisations supporting that individual with their career development to support and retain them in their organisation.

So I looked at it in a couple of different ways. Firstly, I wanted to see if how organisations support career development has changed over time. I looked at some data that had already been collected through a human resources survey called Cranet. They surveyed HR managers across the world. I was looking in particular at the Australian data. I wanted to see if organisations were offering less or more career management practices now than in early 1990s. Not so surprisingly, what I did find was that more organisations are offering organisational career management practices now than what they were in the early 1990s.

What was really interesting was that the practices that appeared to be the most popular were those that were more complex. So things like supporting employees in engaging in networking, supporting employees with career consultations; things that required what I would perceive as this dual engagement both from the perspective of the organisation and from the employee.

Next, I wanted to see, what do the employees, HR managers and line managers think supports engagement in these practices? I completed just over fifty interviews across different organisations. What I found was that it wasn't as simple as organisations just offering these practices and employees just buying into them. It really depended on the individual employee, but what really was important was the line manager. How well did the line manager communicate what was available to employees, how well did the line manager build trust in that employee, so that the employee would feel supported to have these sorts of career conversations. The manager had a really important role, but that wasn't enough. The employee needed to be engaged, HR needed to be engaged, senior managers also needed to lead the strategy. I later did some follow up studies to tease out some of those ideas from those two earlier studies. But that is my PhD research in a nutshell.



As I mentioned I've been working in sport for the last seven years, so I'm also interested to see how athletes are supported in their career development or what engages athletes to consider how they can prepare for their post sporting life now. So, the area of research that I support with the honours students links to some of those ideas; organisational career management, athlete career management, and how athletes are best supported in their career development.



**Dr Hess:** Selfishly I think all my research is interesting and relevant, but I think particularly looking at all the career areas that we see in the world of work as impacted by changes. Whether it's looking at professions or occupational groups and seeing how individuals in these career areas can best navigate career change and transitions, forced or unforced, will be an ongoing, continually important area of work.

Athletes and supporting athlete career development I believe will continue to be important. A specific focus in the next few years may be considering the demands for female athletes. We're going through a period where female athletes are still semi-professional, but they have more demands on their time, which is quite impactful. So, future research is needed to understand how to best support female athletes to ensure both their well-being and mental health are supported. Sport might also be quite topical in Australia because Brisbane is hosting the Olympic Games in ten years. The Olympic Games is always an event that elite athletes focus their careers on, but how can we best support those athletes following that big sporting event?

So those are some research areas I think will be interesting to further unpack in the next decade.

**Milena:** It's such an intriguing topic because it's something that we encounter in workplaces every single day. Are there any prospective research ideas that you have in that realm that you would really like to see realised?



**Milena:** Well, any prospective honours students reading this, consider looking into those things! Thank you for sharing them! On the note of prospective students, do you have any advice for those who are hoping to continue into the field of organisational psychology? Whether that be study advice or what kind of jobs or volunteering roles they should be seeking out?

**Dr Hess:** That's a really excellent question. Firstly, complete the PSYU3888 undergraduate unit if you're interested in orgpsych. You'll receive a broad exposure to the different theories that underpin organisational psychology. That would be my first and most important piece of advice.

In the APS there is also a college of organisational psychology, and they often have different networking type events that you can attend. They also run a conference every couple of years. This year it's in Gold Coast, so why wouldn't you want to spend time in July in the Gold Coast learning about Orgpsych?



I know you [students] have a lot of demands on your time in terms of work and study, but a lot of you would also already be working in a range of different job roles, or perhaps your family members are. So, it might also be useful to consider: How are they selecting people? How are they developing their people? How are they managing people? Just start to contemplate, what are the things they do well, what are the things they could be doing better?

You can also start to consider entry-level type roles in organisational psychology. These entry-level roles can include recruitment, market research, or consulting. Several consulting firms recruit psychology undergraduates for summer or winter internships, perhaps if you are reading this in your third year, consider completing a winter or summer internship in a consulting company to learn more about that type of work. This will help you to see what those different organisations do, and how you might be able to apply your psychological knowledge in different ways.

In terms of study skills, everybody is individual. I think one of the biggest things that I always tell students though, is take a pen and paper to your lectures and write in your lectures. I think it's a really good way to consider the information that's being presented. I do see students now with the electronic pads doing the electronic thing, so perhaps I should be encouraging that as well. I definitely pay attention more so when I don't have email and things like that to distract me, for sure.



**Milena:** Thank you so much for sharing those valuable ways that we can be getting ourselves involved in the industry. I know personally towards the beginning of my degree, I found it incredibly difficult to seek out roles that were relevant and find organisations that were willing to take psychology students under their wing and give us some field experience. A lot of the things you listed I hadn't heard of before; it would definitely be awesome to consider them.

Now potentially the least related question, if you weren't an organisational psychologist, are there any other things that you would have considered doing?

**Dr Hess:** I don't know... but, this is an ironic story perhaps. When I was in primary school, I don't know if any other students had to do this, but I had a dress-up career day where I dressed up as the career that I wanted to be when I grew up. The role that I dressed up as was a check out person at a supermarket. I think that was my dream career when I was six or seven, and I don't actually know why it was. Maybe it was the aspect of customer service, counting, researching, I'm not sure. But now I get to realise that dream career every time I go shopping and I do the self-serve and I can believe I am that person again! I've made my dream career!

I honestly think that I am living my dream career... I've worked in consulting, I've worked in sport, I now combine that experience in work as a university lecturer.

*"My biggest bit of advice would be, to be okay to explore, to learn from all the different classes you have, take the chance to learn about the different areas of work, and I have no doubt that wherever you take your career, your psychology degree will serve you well".*

## OrgPsych Toolkit!

### **Master of Organisational Psychology at MQU:**

<https://mq.edu.au/study/find-a-course/courses/master-of-organisational-psychology>

### **APS College of Orgpsych:**

<https://groups.psychology.org.au/cop/>

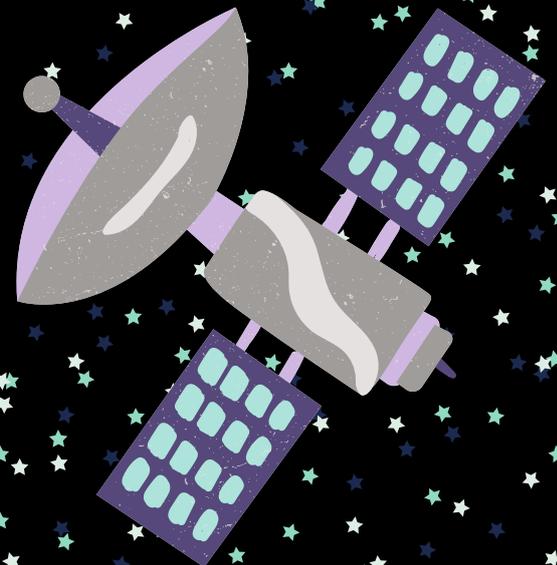
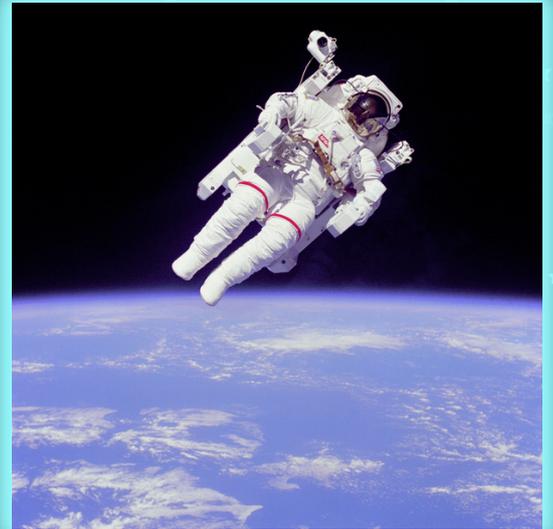
# Space Versus Mind: The Final Frontier

The Psychological Impacts  
of Space Exploration

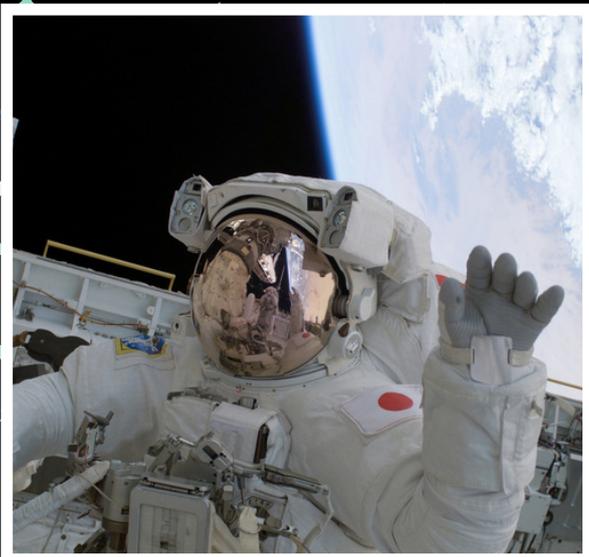
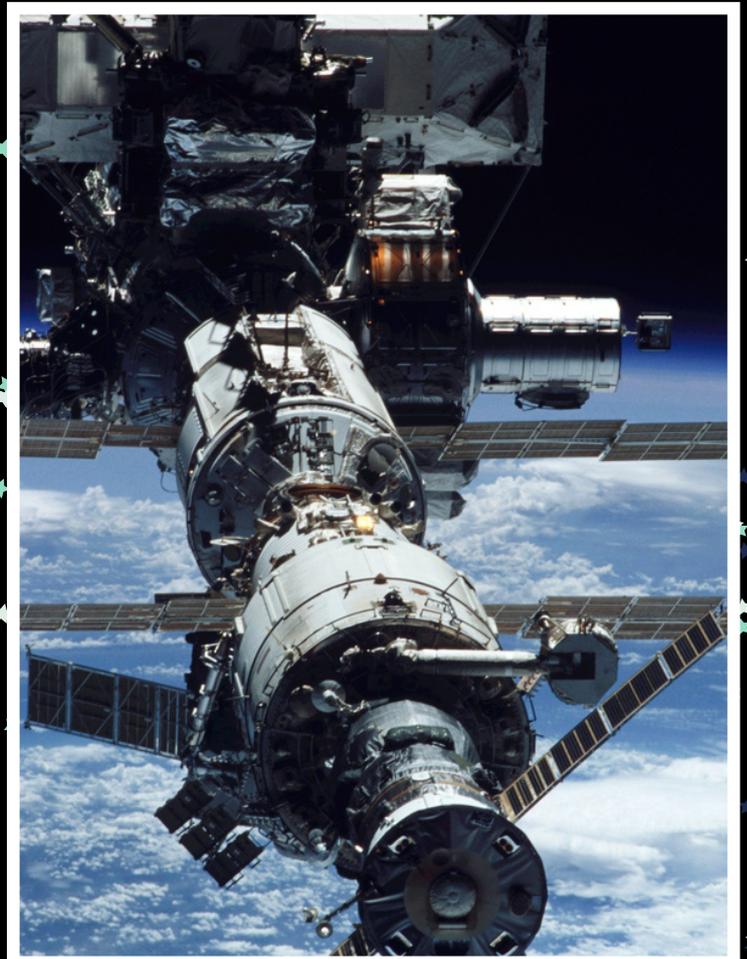
Written by Gordon Carroll  
Edited by Ian Mancera

If over 61 years of manned spaceflight has taught us anything, it is humanity's ability to push ourselves to, and over, extreme limits. The high stress environment that is space requires individuals to undergo intense training before they even set foot in the capsule. But how exactly do they stay sane hundreds of kilometres above the earth, all alone in a space that screams 'claustrophobia'. Space and our methods of navigating it are filled with psychological and technological challenges accompanied by unknown impacts. As we delve deeper into the universe, how will we manage complete isolation with zero contact with earth for months and years?

In 1961, the Space Race culminated in the launch of the first manned spaceflight, the Russian cosmonaut Yuri Gagarin. This was followed shortly after by the American astronaut, Alan Shepard a few months later (Mars, 2021). Since then, there have been hundreds of flights, even now seeing billionaires and tourists heading up to space. The launch of these untrained 'space tourists' implies that space travel is not difficult and is easy to cope with; however, they only spend a maximum of a couple of hours orbiting the earth. The length of the spaceflight is crucial to the toll it would take on human psychology (De La Torre et al., 2012). Surprisingly, it wasn't until 21 years after the first manned flight that the mental health effects of spaceflight began to be studied (Harrison & Fiedler, 2012). This was due to the Russian cosmonaut Valentin Lebedev, who noticed that the longer he stayed on the International Space Station (ISS), the worse his mental health grew (Battaglia, 2012). His journal entries addressed the five months of flight, writing "We don't feel time anymore. I begin to count the days. I've never done it before" (Battaglia, 2012).



The psychologists at the time rationalized that Lebedev was experiencing depression; however, Marc Shepanek (2008), a psychologist at NASA, explained that it's not so much depression but the astronauts being constantly under a lot of stress. He further explains how the amalgamation of many stimuli can lead to a sense of being overwhelmed, which steers astronauts to systematically shut out certain tasks to maintain a sense of stability. Lebedev also explained how his motivation fell the further into his mission he got, not even wanting to look out of the porthole anymore (Battaglia, 2012). Certain crew members can be more prone to suffering from these effects, due to distinct character traits, genetic predisposition, or emotional instability (De La Torre et al., 2012). This means that rigorous physical, mental, and social testing is put in place to determine the best people for a crew, and how to manage each individual member.





Spaceflight is not unlike being inside a submarine for extended periods of time; a small, cramped metal space, thousands of meters away from the surface of the earth. And when considering how quickly claustrophobia can overcome the crew, the psychological strain can be quite intense. In recent years, there has been an increase in protecting and researching the physiological effects of spaceflight, and as such, NASA, in cooperation with other space agencies, has introduced some technologies that help mitigate these effects. These technologies serve to create a low stress environment by emulating on-earth environments (Turner, 2019). As the ISS is continually orbiting the earth at 7.66 kms per second, it orbits once every 90 minutes, witnessing 16 sunrises each day. This leads to an abnormal time schedule, with the astronauts experiencing a different 24 time than they would be used to, which causes disruption in sleep (Pagel & Choukèr, 2016). Special sleep headbands that emit low frequency slow waves to help maintain natural circadian rhythms are being tested to help improve sleep quality.



These will also allow the crew to get a deeper sleep and recover from stressful events faster. Augmented reality systems to combat the enclosed environment are also being employed in the ISS, with these simulated environments also allowing the crew to experience a wide range of activities including exercise in the virtual world (Frank, 2021). Radiation shields and suits are in development to cap the level of radiation each of the crew is exposed to on their stay in the ISS (Jackson, 2019). Back on earth, complex machine learning algorithms are used to predict behavioural conditions between the astronauts in order to keep their mental states at ease. These technologies, although primarily focused on the current space crew, are being further developed for the longer missions that are planned in the future.

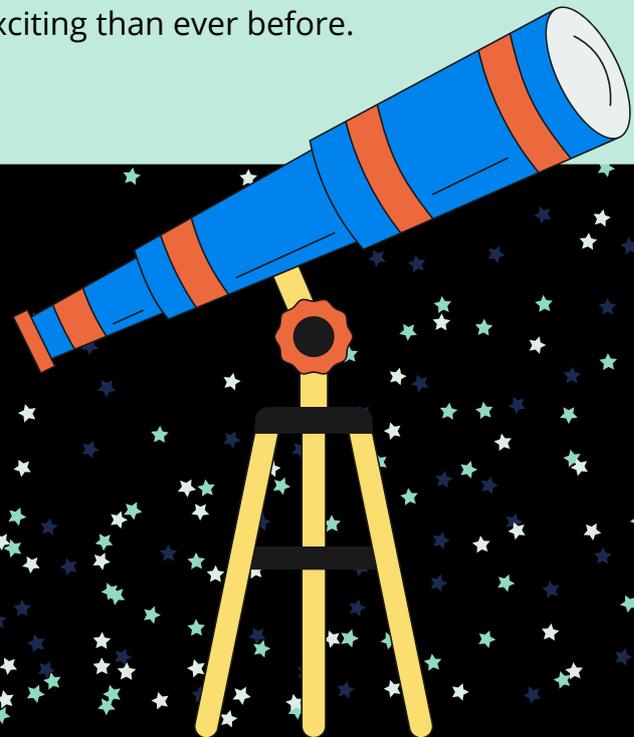


Despite the current difficulties of missions that are 'only' hundreds of kilometres from Earth, future Mars missions aim to keep astronauts in space for many months with zero contact, a psychologically daunting task. In order to prepare for this, many space agencies have come together to run joint isolation programs and joint research and development programs. Building off the Mars500 (De La Torre et al., 2012) mission which originally isolated 5 males in an enclosed environment with differing levels of stress in 2009, NASA is currently running the Hawaii - Space exploration and Analog mission (HI-SEAS). The program, run 2,500 meters in elevation on the largest mountain in the world, Mauna Loa, aims to completely simulate the landscape and environment of Mars (Castro Nunes et al., 2020). Over its duration, five successful simulations, running from 4 to 12 months have yielded incredible information regarding managing the psychological strains on this Mars mission.

The hyper-realistic simulation even delays communication to 'earth' by 20 minutes and the crew must wear full protective suits when exiting the habitat. However, it does not just focus on the physical and psychological effects of the crew; the rocky terrain also allows for rovers and drones to be integrated into the simulation. Although the program does not factor in the microgravity or radiation, it presents us with an image of how the longer missions will unfold, allowing us to push the limits of space travel and our mind (Castro Nunes et al., 2020).



So, as we delve deeper into our solar system, and eventually into the wider universe, extreme lengths of spaceflight will only become more common. We have come a long way since our first manned spaceflight, now focusing on creating new technologies and completely understanding how we function in an environment so dissimilar to earth. Needless to say, the future of space exploration is safer and more exciting than ever before.



## References

- Castro Nunes, A., Musilova, M., Kerber, S., Pouwels, C., Wanske, A., D'Angelo, J., Foing, B., & Rogers, H. (2020). EMMIHS-2 Analog Moonbase Viewpoint and Results – an engineering outlook at the second Euro-Moonmars Ima hi-seas 2019 campaign. <https://doi.org/10.5194/epsc2020-1110>
- De La Torre, G. G., van Baarsen, B., Ferlazzo, F., Kanas, N., Weiss, K., Schneider, S., & Whiteley, I. (2012). Future perspectives on space psychology: Recommendations on psychosocial and neurobehavioural aspects of human spaceflight. *Acta Astronautica*, *81*(2), 587–599. <https://doi.org/10.1016/j.actaastro.2012.08.013>
- Frank, J. (2021). *News - T2 augmented reality demonstration presented at NASA/Microsoft Solutions Workshop*. NASA. Retrieved May 21, 2022, from <https://ti.arc.nasa.gov/news/T2AR-demo-presentation/>
- Jackson, S. (2019, September 10). *NASA, CERN technology advances miniaturized radiation detection*. NASA. Retrieved May 21, 2022, from <https://www.nasa.gov/feature/nasa-cern-timepix-technology-advances-miniaturized-radiation-detection/>
- Mars, K. (2021, May 4). *60 years ago: Alan Shepard becomes the first American in Space*. NASA. Retrieved May 21, 2022, from <https://www.nasa.gov/image-feature/60-years-ago-alan-shepard-becomes-the-first-american-in-space/>
- NASA. (2000). *History.nasa.gov. ASTP (USSR) MISSION SR32/1*. Retrieved May 21, 2022, from <https://history.nasa.gov/astp/documents/astp%20ussr3.pdf>
- Pagel, J. I., & Choukèr, A. (2016). Effects of isolation and confinement on humans—implications for manned space explorations. *Journal of Applied Physiology*, *120*(12), 1449–1457. <https://doi.org/10.1152/jappphysiol.00928.2015>
- Turner, D. (2019). *Headspace: How Space Travel Affects Astronaut Mental Health*. MIT. Retrieved May 21, 2022, from <https://cmsw.mit.edu/angles/2019/headspace-how-space-travel-affects-astronaut-mental-health/>



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# Thank you!

Best of luck for the end of semester!  
Keep an eye out for Issue 2 coming  
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