Project Title:	The interactive effect of cognition, emotion, and motivation on behaviour	
Project Number	**HSS0765**	
Monash Main Supervisor (Name, Email Id, Phone)	Antonio Verdejo-Garcia Antonio.Verdejo@monash.edu	*Full name, Email*
Monash Co-supervisor(s) (Name, Email Id, Phone)	Naomi Kakoschke Naomi.kakoschke@monash.edu	
Monash Head of Dept/Centre (Name,Email)	Prof. Kim Cornish psych.hos@monash.edu	*Full name, email*
Monash Department:	School of Psychological Sciences and the Monash Institute of Cognitive and Clinical Neurosciences (MICCN)	
Monash ADRT (Name,Email)		*Full name, email*
IITB Main Supervisor (Name, Email Id, Phone)	Prof. Rashmi Gupta r.gupta@iitb.ac.in	*Full name, Email*
IITB Co-supervisor(s) (Name, Email Id, Phone)		*Full name, Email*
IITB Head of Dept (Name, Email, Phone)	Prof. Pushpa Trivedi trivedi@hss.iitb.ac.in	*Full name, email*
IITB Department:	Humanities and Social Sciences	

Research Clusters: **Research Themes:**

Highlight which of the Academy's CLUSTERS this project will address? *(Please nominate JUST **one.** For more information, see www.iitbmonash.org)*	Highlight which of the Academy's Theme(s) this project will address? *(Feel free to nominate more than one. For more information, see www.iitbmonash.org)*	
1	*Material Science/Engineering (including Nano, Metallurgy)*		
2	*Energy, Green Chem, Chemistry, Catalysis, Reaction Eng*	*1*	*Advanced computational engineering, simulation and manufacture*
3	*Math, CFD, Modelling, Manufacturing*	2	
4		3	*Infrastructure Engineering*
5	*CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control*	4	*Clean Energy*
6	*Earth Sciences and Civil Engineering (Geo, Water, Climate)*	5	*Water*
7	*Bio, Stem Cells, Bio Chem, Pharma, Food*	6	*Nanotechnology*
8		7	*Biotechnology and Stem Cell Research*
	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng HSS, Design, Management	8	==*Humanities and social sciences*== Design

The research problem

Define the problem

The ability to remain focused on a task is vital for any coherent cognitive function, mainly when there might be potential interference from distractors that are irrelevant to the task. However, people are often distracted by task-irrelevant stimuli. Daily life provides numerous examples: a fly hovering about might distract you while reading this proposal, just as an attractive or graphic billboard can dangerously distract a driver. One influential theory, known as "Perceptual Load Theory" (PLT) [Lavie, 1995], which suggests that the mechanisms that enable us to ignore task-irrelevant information depend on the level and type of cognitive load manifested within a situation or scene. For example, when the perceptual load is high, we appear to be able to filter out distractors early in processing, by their low-level features (e.g., color, shape, size). However, when the perceptual load is low, people appear unable to avoid processing distractors' meaning. PLT enjoys status as one of the today's most prominent and successful models of attention; there are important questions about the degree to which this framework generalizes to real life. Specifically, in the real world, we are surrounded by items of emotional and motivational significance; a limitation of most research to date is that the distractor stimuli used in such experiments have primarily been neutral (i.e., non-emotional). Thus, it is unclear whether the perceptual load also determines the processing of emotional or motivationally salient stimuli. We recently have shown that it is easier to ignore aversive images than positive ones when focusing on other things. However, it is unclear whether our abilities to attend to and ignore these differing types of emotional stimuli engage the same neural processes and mechanisms, and this is one of the gaps in the literature that the current proposal aims to fill.

Project aims

Define the aims of the project
To study the role of perceptual load in the processing of emotional and motivational distractors and their neural correlates.

Expected outcomes

Highlight the expected outcomes of the project
1. The project will produce several outcomes regarding the development of theoretical framework and intervention program for health and mental problems, capacity building, knowledge transfer, training of students in cognitive neuroscience and scientific publications, etc.

2. The perceptual load theory has had a substantial impact on cognitive psychology and neuroscience and has generated a large body of research appearing in the highest-profile journals. For these reasons, developing a theoretical framework that builds upon this theory will be valuable for the Indian and international research communities.

3. It will provided insight about the interaction of cognition of emotion in behaviour and its neural mechanism.

4. Understanding of the neurocognitive mechanisms underlying value-driven attentional priority under different attentional loads will contribute to the understanding of the mechanisms underlying attentional biases for drug-related stimuli in drug abusers, which will help to develop better intervention program of these disorders.

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.
The proposed research is highly interdisciplinary and sits at the disciplines of the humanities and social sciences and intersection of Neuroscience, Financial Economics and Psychology. The project has important applied implications for field as diverse as consumer psychology, marketing, and advertisement. At the same time, this research has important clinical applications for the assessment and treatment of conditions such as drug abuse and obesity.

Capabilities and Degrees Required

Students who have completed a Master program in Cognitive/Behavioural Sciences or related disciplines including Psychology, Neuroscience, Sciences, Engineering (e.g., Computer Science, Electronics & Communication, Electrical Engineering), are eligible to apply for admission to the Doctoral Program. Applicants familiar with the knowledge of eye-tracker EEG/ERP/fMRI/TMS and/or cognitive/ neuropsychology/ would be encouraged.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.
Prof. MURAT YÜCEL, School of Psychological Sciences, MONASH University
Prof. Nilli Lavie, Institute of Cognitive Neuroscience, University College London, UK
Prof. Jane E. Raymond, Birmingham University, UK
Prof. Steven B. Most, School of Psychology, University of New South Wales, Australia

Prof. Mike Le Pelley, School of Psychology, University of New South Wales, Australia

Select up to **(4)** keywords from the Academy's approved keyword list **(available at http://www.iitbmonash.org/becoming-a-research-supervisor/)** relating to this project to make it easier for the students to apply.

Attention, emotion, motivation, reward and punishment processing, perceptual load