

GET TO KNOW

A State Walnut ~相間: 非法藥物使用研究調查 現正招募健康對照細 完成整個研究可獲得港幣300元! 研究目的 參加者招募 至今時回回自行時間中國地域已行還 25-40進的國際支持

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7至12龍里有罪注 会高十六团会 [] 《平日班





WELCOME TO THE DEPARTMENT OF PSYCHOLOGY, HKU

The Department of Psychology at HKU is a key unit of research and teaching within the Faculty of Social Sciences. We are the most comprehensive psychology department in Hong Kong, comprising psychological sciences and neuroscience as well as professional disciplines including both clinical psychology and educational psychology. We are proud of our commitment to integrating empirical research into our research impact. Our research is structured around four thematic research clusters that represent our core areas of research excellence, each with focal research labs. The areas are:

1. Developmental and Educational Psychology. This cluster is focused on psychological changes across the early and adolescent years, particularly related to educational attainment.

2. Neuropsychology, Cognition, and Human Neuroscience. Research in this cluster is focused on using behavioural and brain responses to understand fundamental psychological phenomena.

3. Sleep, Affective Neuroscience and Stress-Related Affective Disorders. This cluster focuses on research on understanding the neurobehavioral basis of affective regulation and how it is implicated in psychological resilience and stress-related mood disorders.

4. Social/Health Psychology. Research in this cluster focuses on human thoughts, social behaviours and health-related outcomes such as internet usage and addiction, biases, morality and motivational goals.

Cutting across these four research clusters, we are currently home to the prestigious national State Key Laboratory of Brain and Cognitive Sciences (the State Key Lab), in which both applied and basic research is conducted on an internationally distinguished level. We are the only psychology department in Hong Kong that has been recognized for its research excellence by the Ministry of Science and Technology of China to operate a State Key Lab.

This booklet provide you a quick glance about research in individual's laboratory at the Department of Psychology. For more information about our research, please visit our department website at www.psychology.hku.hk.

Department of Psychology The Unversity of Hong Kong

Planting Seeds Today for Tomorrow's Blossoms at HEU.

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Laboratory of Clinical Psychology & Affective Neuroscience

Principal Investigator: Professor Charlene Lok-man LAM

Our Lab

The Laboratory of Clinical Psychology and Affective Neuroscience focuses on identifying mechanisms contributing to pathological fear and anxiety, with the goal of developing targeted interventions for affect and mood dysregulation and enhancing psychological well-being. We use a combination of physiological measures (e.g. pupillometry), functional neuroimaging (fMRI), and behavioural experiments to answer the research questions.

Research Interests

Our lab focuses on identifying brain mechanisms contributing to pathological fear and anxiety. We aim to develop novel and targeted interventions for affect and mood dysregulation, with the ultimate goal to transform psychological care for people who are affected by mental health issues and / or brain-related disorders. In the lab, we use a combination of physiological measures (e.g. pupillometry), functional neuroimaging (fMRI), brain stimulation (TMS) and behavioural experiments to answer research questions.

Current Research Projects

- Perceptual awareness and modulation of fear
- The Eye Movement project
- Disrupting fear reconsolidation with transcranial magnetic stimulation (TMS)
- The neuropsychological mechanisms of parental distress in mothers with substance abuse

Recent Publications

- Tong, H., Dong, N., Lam, C. L., & Lee, T. M. C. (2024). The effect of bright light therapy on major depressive disorder: A systematic review and meta-analysis of randomised controlled trials. Asian Journal of Psychiatry. <u>https://doi.org/10.1016/j.ajp.2024.104149</u>
- Lei, G. L., Lai, C. S., Lee, T. M., & Lam, C. L. (2024). The effect of transcranial direct current and magnetic stimulation on fear extinction and return of fear: A meta-analysis and systematic review. Journal of Affective Disorders, 362, 263-286. doi: 10.1016/j.jad.2024.06.060. • Yu, J., Lam, C. L., & Lee, T. M. C. (2023) Mild cognitive impairment. In G. J. Boyle, Y. Stern, D. J. Stein, B. J. Sahakian, C. J. Golden, T. M. C. Lee, & S. H. A. Chen (Eds.), The SAGE Handbook of Clinical Neuropsychology: Clinical Neuropsychological Disorders (pp.379 397). SAGE Publication. https://doi.org/10.4135/9781529789522

Research Recruitments

Participate in our research studies:

- EEG Fear Conditioning study
- Eye Movement & Fear Reconsolidation
- Personality, Cognitive Bias & Emotion
- Neuropsychological mechanism of parental distress in mothers with substance use

More information



- Lam, C.L., Barry, T., Yiend, J., Lee, T.M.C. (2023). The role of consciousness in threat extinction learning. Consciousness & Cognition, 116, 103599.
- Lam, C.L.*, Wong, C.W.*, Junghöfer, M., Roesmann, K. (2023). The cerebellum and dorsolateral prefrontal cortex are involved in implicit affective associative learning: An fMRI study of threat learning in the Multi-CS conditioning paradigm. International Journal of Clinical and Health Psychology. 23(2), 100357. doi: 10.1016/j.ijchp.2022.100357.
- Gao, M., Lam, C.L., Lui, W., Lau, J., Lee, T.M. (2022). Preoperative brain connectome predicts postoperative changes in processing speed in moyamoya disease. Brain Communication. 4(5), fcac213. doi: 10.1093/braincomms/fcac213

Laboratory of Neuropsychology and Human Neuroscience

Principal Investigator: Professor Tatia Mei-chun LEE

Our Lab

Combining state-of-the-art functional neuroimaging techniques, computational tools, and behavioural methods, the Laboratory of Neuropsychology and Human Neuroscience aims to build and promote a more comprehensive understanding of neurocognitive and affective mechanisms underpinning human behaviour.

Over the years, the Lab has focused on research themes related to neuroplasticity, healthy ageing, and affective regulation.

Research Interests

The Laboratory of Neuropsychology and Human Neuroscience's research focuses on (1) what and

Current Research Projects

- Utilizing transcranial direct current stimulation (tDCS) to boost social pleasure and participation in older lonely individuals
- Reduce high-risk behaviours under chronic stress via tDCS-induced neural plasticity

Recent Publications

Chen J, Chan RNY, Li CT, Chan JWY, Liu Y, Li SX, Chau SWH, Leung KS, Heng PA, Lee TMC, Li TMH, & Wing YK. Multimodal digital assessment of depression with actigraphy and app in Hong Kong Chinese. Translational Psychiatry. 2024;14:150.

https://doi.org/10.1038/s41398-024-02873-4

 Liu JM, Gao M, Zhang R, Wong NML, Wu J, Chan CCH, & Lee TMC. A machine-learning approach to model risk and protective factors of vulnerability to depression. Journal of Psychiatric Research. 2024;175:374–380.

how experiences induce beneficial neuroplastic changes, and (2) the neurocognitive and neuroaffective underpinnings of functions that define the human nature of an individual.

The goal of our Lab is to create knowledge that contributes to promoting brain health and psychological health.

More information



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https://doi.org/10.1016/j.jpsychires.2024.04.048

- Long J, Peng L, Li Q, Niu L, Dai H, Zhang J, Chen K, Lee TMC, Huang M, & Zhang R. Acute stress impairs intentional memory suppression through aberrant prefrontal cortex activation in high trait ruminators. International Journal of Clinical and Health Psychology. 2024,24(2):100463. https://doi.org/10.1016/j.ijchp.2024.100463
- Niu L, Song X, Li Q, Peng L, Dai H, Zhang J, Chen K, Lee TMC, & Zhang R. Age-related positive emotional reactivity decline associated with the anterior insula-based resting-state functional connectivity. Human Brain Mapping. 2024;45(2):e26621.

https://doi.org/10.1002/hbm.26621

 Pei Y, Wang Z, & Lee Lee TMC. P3b correlates of inspection time. IBRO neuroscience reports. 2024;16:428-435.

https://doi.org/10.1016/j.ibneur.2024.03.002

Psychopathology, Affective Neuroscience & Decision Making Laboratory

Principal Investigator: Professor Frances Jingwen JIN

Our Lab

Our interdisciplinary research bridges affective science, neuroscience, and clinical psychology to better understand the psychological and neural mechanisms of affective experiences and related mental health issues (primarily anxiety and depression).

To this end, a primary research theme of our team has focused on a fundamental aspect of affective science, namely the processing of emotional information.

Research Interests

Specifically, we investigate

- how emotional information is encoded in the human brain,
- how we make emotion-related perceptual decisions, and finally, how alterations to

Current Research Projects

- Understanding Perceptual Decision-Making Processes about emotional stimuli
- Computational Modeling of Mental Disorders
- Identify Computational and Neural Correlates and Risk Factors of Depression and Anxiety

Recent Publications

 #Pitliya, J., Burani, K., Nelson, B, D., Hajcak, G., †Jin, J.(2024). Reward-Related Brain Activity Mediates Drift Diffusion Modeling Decision-Making Deficits in Adolescent Depression. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging.

https://doi.org/10.1016/j.bpsc.2024.06.007

#Zhong, Y., Perlman, G., Klein, D., ^{*}Jin, J.,
*Kotov, R. (2024). The Prospective predictive

computational and neural systems relevant to emotion processing contribute to the development of psychopathology.

Research Recruitments

• Interested in Belief Formation? Feeling Anxious or Depressed?

More information



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power of parent-reported personality traitsand facets in first-onset depression inadolescent girls.Research on Child andAdolescentPsychopathology.https://doi.org/10.1007/s10802-024-01186-w

- #Hedley, F, E., Larsen, E., Mohanty, A., Liu, J.
 Z., †Jin, J.Understanding anxiety through uncertainty quantification. (2024). The British Journal of Psychology. <u>https://doi.org/10.1111/bjop.12693</u>
- Ozturk, S., Zhang, X., Glasgow, S., Karnani, R.R#., Imbriano, G., Luhmann, C., †*Jin, J., *Mohanty, A. (2023). Knowledge of threat biases perceptual decision-making in anxiety: Evidence from signal detection theory and drift diffusion modeling.Biological Psychiatry: Global Open Science, 4(1), 145–154. <u>https://doi.org/10.1016/j.bpsgos.2023.07.005</u>
- *Pan, Y., Wen, Y., *Jin, J., *Chen, J. (2023). The interpersonal computational psychiatry of social coordination in schizophrenia. The Lancet Psychiatry, 10(10), 801–808. https://doi.org/10.1016/s2215-0366(23)00146-3

Sleep, Self-regulation and Health Research Laboratory

Principal Investigator: Professor Wai-sze CHAN

Our Lab

The SLASH enhance lab aims the to understanding of the processes underlying health behaviour changes and translating this knowledge into effective and scalable interventions. Our current research aims to unravel the mechanisms underlying the link between sleep and eating behaviors. Specifically, our current research projects examine the effects of sleep deprivation on food-related conditioning and the efficacy of exposure therapy for disordered eating behaviors.

Research Interests

- The mechanisms underlying the relationship self-regulation, and sleep, among psychopathology
- Efficacy and implementation of digital health interventions

Recent Publications

- Chan W.S., Cheng W.Y., Lok S.H.C, Cheah A.K.M, Lee A.K.W, Ng A.S.Y, Kowatsch T. How to Optimize Digital Cognitive Behavioral Therapy for Insomnia (dCBTi)? A Randomized Controlled Comparative Trial of dCBTi With Different Types of Coaching Support. (Revised and resubmitted). JMIR Preprints. 09/08/2023:51716 http://doi.org/10.2196/preprints.51716.
- Chan, W.S. (Revised and resubmitted). Effects of Sleep Deprivation on Food-Related Pavlovian-Instrumental Transfer: A Randomized Crossover Experiment. Scientific Reports.
- Chan, W.S. & Cheng, W.Y. (Under review). Study Protocol: Parallel-group, Randomized А Controlled Trial of Enhanced Cue Exposure Therapy for Negative Emotional Eating. Nutrition. Preprint: doi: https://doi.org/10.21203/rs.3.rs-3837258/v1
- Chan, W. S., & Lai, T. T. (2023). Pavlovianinstrumental transfer effects in individuals with binge eating. Journal of Eating Disorders, 11(1), 113. <u>https://doi.org/10.1186/s40337-023-00824-w</u>.
- Treatment for disordered eating and binge eating

Research Recruitments

- Partial Sleep Deprivation and Eating Behavior
- Exposure therapy for disordered eating and binge eating

More information



- Chan, W. S., McCrae, C. S., & Ng, A. S. (2023). Is Cognitive Behavioral Therapy for Insomnia Effective for Improving Sleep Duration in Individuals with Insomnia? A Meta-Analysis of Randomized Controlled Trials. Annals of behavioral medicine: a publication of the Society Behavioral Medicine, 57(6), 428 - 441.of https://doi.org/10.1093/abm/kaac061.
- Chung, H.K-S., Louie, K., & *Chan W.S. (2023). Development and evaluation of a Chinese shortform of the sleep-related behaviors questionnaire in Hong Kong Chinese adults using item response theory. Journal of Health Psychology.

Sleep Research Clinic and Laboratory

Principal Investigator: Professor Shirley Xin LI

Our Lab

The Sleep Research Clinic and Laboratory endeavours to understand how sleep affects our daily function and our physical and mental wellbeing. Our ultimate goals are to translate research into practice and to inform the development of treatments and interventions to improve sleep and health.

Current Research Projects

- Treatment study for Depression in Youths with Delayed Sleep Phase (DELAY Trial)
- Treatment Study for Insomnia in Pregnant Women with Comorbid Insomnia and Depression
- Efficacy of group cognitive behavioural therapy for youth anxiety and insomnia
- Treatment Study for Insomnia in Adolescents with ADHD
- Longitudinal follow-up study of adolescents with eveningness

Research Interests

- Circadian Rhythm
- Sleep & Cognition
- Sleep Disorders
- Sleep & Circadian Interventions

Recent Publications

- Ip B.Y.T., Lee S., Li S.X.# (2024). Telehealthdelivered parent-based sleep-focused intervention for insomnia in preschool children with autism spectrum disorder: A randomized controlled trial. Autism, <u>https://doi</u>: 10.1177/13623613241246502.
- Cheung F.T.W., Li X., Hui T.K., Chan N.Y., Chan J.W.Y., Wing Y.K., Li S.X.# (2023)
 Circadian preference and mental health outcomes in youth: A systematic review and
- Sleep in children with special educational needs (SEN)

Research Recruitments

- 青少年小組及手機失眠治療計劃
- 青少年失眠及焦慮治療計劃
- 孕婦失眠及抑鬱治療計劃
- 夜瞓青少年情緒改善研究計劃
- 長者睡眠與認知功能研究志願者招募
- 專注力不足/過度活躍症青年失眠治療計劃
- 青少年的睡眠及注意力研究

More information



- meta-analysis. Sleep Medicine Reviews, 72:101851.
- Sun W., Cheung F.T.W., Chan N.Y., Zhang J., Chan J.W.Y., Chan K.C.C., Wing Y.K., Li S.X.# (2023). The impacts of intra-individual daily sleep variability on daytime functioning and sleep architecture in healthy young adults: An experimental study. Journal of Sleep Research, 33(3):e13967.
- Chan N.Y., Lam S.P., Zhang J., Chan J.W.Y., Yu M.W.M., Suh S., Yang C.M., Okajima I., Li A.M., Wing Y.K., Li S.X.# (2022). Efficacy of emaildelivered vs. face-to-face group cognitive behavioural therapy for insomnia in youth: A randomized controlled trial. Journal of Adolescent Health, 70(5):763-773.
- Ling J., Lin X., Li X., Chan N.Y., Zhang J., Wing Y.K., Hu X.,* Li S.X.# (2022). Neural response to rewards in youths with insomnia. Sleep, 45(2): zsab238.



3D Vision and Action Laboratory

Principal Investigator: Professor Jeffrey SAUNDERS

Our Lab

The lab is interested in using psychophysical and visual-motor experiments to study visual perception and visual control of actions, especially perception of 3D structure and motion. Our theoretical approach is to model sensory processing as Bayesian statistical estimation.

Lab's Research Interests

- Visual perception
- Perception and action
- Computational modeling

Current Research Projects

- Visual control of walking to a target
- Perception of 3D surface slant
- Role of symmetry in percetion of 3D shape
- Perception of 3D shape from monocular cues
- Visual processing of 3D shape for grasping objects

Selected Publications

Cheng, M., Kato, M., Saunders, J.A., Tseng, C.H. (2020). Paired walkers with better first impression synchronize better. PLoS ONE 15(2): e0227880.Cheng, M., Kato, M., Saunders, J.A., Tseng, C.H. (2020). Paired walkers with better first impression synchronize better. PLoS

Facilities in the Lab

- HTC VIVE
- Oculus Rift
- Leap Motion
- nVisor SX111 Heas-mounted Display & InterSense IS-1200 InertiaCam
- 3D Printing
- 3D Glasses
- 3d Guidance Trakstar
- 3D Projector

More Inforamtion



- ONE 15(2): e0227880.
- Saunders, J. a, & Chen, Z. (2015). Perceptual biases and cue weighting in perception of 3D slant from texture and stereo information. Journal of Vision, 15(February) 1–24.
- Lee YL, Saunders JA, (2013). Symmetry Facilitates Shape Constancy for Smoothly Curved 3D Objects. Journal of Experimental Psychology: Human Perception and Performance, Vol. 39, No. 4, 1193–1204.
- Li WO, Saunders JA, Li L, (2009). Recruitment of a novel cue for active control depends on task dynamics. Journal of Vision, 9 (10): 9.
- Chen, Z., & Saunders, J. A. (2015). Online processing of shape information for control of grasping. Experimental Brain Research, 233(11), 3109-3124.

Addiction, Cyberpsychology & Choice (ACC) Laboratory

Principal Investigator: Professor Yuanwei YAO

Our Lab

Our team aims to investigate the cognitive and neural mechanisms underlying decisionmaking and how these processes go awry in individuals with internet gaming disorder and problematic social media use. Due to the interdisciplinary nature of these research topics, we use a combination of multimodal methods, including behavioral experiments, computational modeling, and neuroimaging techniques.

Research Interests

 Addiction: Decision-making and other cognitive alterations in individuals with addictions. Our lab focuses on internet gaming disorder and problematic social media use.

Current Research Projects

- Effort-based decision-making
- Reinforcement learning
- Internet gaming disorder
- Problematic social media use

Recent Publications

- Yao, Y. W., Song, K. R., Schuck, N. W., Li, X., Fang, X. Y., Zhang, J. T., Heekeren, H. R., & Bruckner, R. (2023). The dorsomedial prefrontal cortex is involved in subjective value representation across effort-based and risky decision-making. NeuroImage, 279, 120326.
- Yao, Y. W., Zhang, J. T., Fang, X. Y., Liu, L., & Potenza, M. N. (2022). Reward-related decisionmaking deficits in internet gaming disorder: A
- Decision-making: Cognitive and neural processes related to various decision situations (e.g., monetary and social).
- Internet Psychology: How does internet use influence our decision-making, learning, and social cognition?

Research Opportunities

We are looking for research interns. Please get in touch with Dr. Yao at <u>ywyao@hku.hk</u> if you are interested in joining us.

- systematic review and meta-analysis. Addiction, 117, 19-32.
- Lopez-Gamundi, P*., Yao, Y. W*., Chong, T. T., Heekeren, H. R., Herrero, E. M., & Pallares, J. M. (2021). The neural basis of effort valuation: A meta-analysis of functional magnetic resonance imaging studies. Neuroscience & Biobehavioral Reviews, 131, 1275-1287.
- Yao, Y. W., Liu, L., Worhunsky, P. D., Lichenstein, S., Ma, S. S., Yang, S., Zhang, J. T., & Yip, S. W. (2020). Is monetary reward processing altered in drug-naïve youth with a behavioral addiction? Findings from internet gaming disorder. NeuroImage: Clinical, 26, 102202.
- Yao, Y. W*., Chen, P. R*., Li, C. R., Hare, T. A., Li, S., Zhang, J. T., Liu, L., Ma, S. S., & Fang, X. Y. (2017). Combined reality therapy and mindfulness meditation decrease intertemporal decisional impulsivity in young adults with Internet gaming disorder. Computers in Human Behavior, 68, 210-216.

Brain and Behaviour Laboratory

Principal Investigator: Professor Dorita H. F. CHANG

Our Lab

The lab is primarily interested in understanding mechanisms underlying visual perception -- in particular binocular function, and their potential for neuroplastic reorganization.

Research Interests

- Visual perception
- Perceptual learning and plasticity
- Visuo-neuro rehabilitation

Recent Publications

- Kam, K. Y., & Chang, D. H. F. (2024). The neurochemistry of learning-driven sensory eye dominance plasticity. Imaging Neuroscience, 2, 1-18. <u>https://doi.org/10.1162/imag_a_00237</u>
- Kam K. Y., & Chang, D. H. F. (2023). Sensory eye dominance plasticity in the human adult visual cortex. Frontiers in Neuroscience, 17:1250493.

https://doi.org/10.3389/fnins.2023.1250493

- Zhen, L., & Chang, D. H. F. (2023). Contextbased modulations of 3D vision are expertisedependent. Cerebral Cortex, 33(11), 7136–7147. <u>https://doi.org/10.1093/cercor/bhad026</u>
- Troje, N. F., & Chang, D. H. F. (2023). Life detection from biological motion. Current Directions in Psychological Science, 32(1), 26-

Current Research Projects

- Brain Imaging (fMRI, DTI, MRS) and Eye Balance
- Brain Stimulation (c/iTBS) and Enhancing Binocular Function
- Behavioural (Perceptual Training) of Binocular Vision

More Information



- 32. <u>https://doi.org/10.1177/09637214221128252</u>
- Chan, A. Y. C., & Chang, D. H. F. (2022). Neural correlates of sensory eye dominance in human visual white matter tracts. eNeuro, 9(6):1-11. ENEURO.0232-22.2022;
 <u>https://doi.org/10.1523/ENEURO.0232-22.2022</u>
- Wong, N. H. L., & Chang, D. H. F. (2022). Uncovering the locus of object-context-based modulations in depth processing using repetitive transcranial magnetic stimulation. eNeuro, 9(4): 1-8. <u>https://doi.org/10.1523</u> ENEURO.0217-22.2022
- Chang, D. H. F., Thinnes, D., Au, P. Y., Maziero, D., Stenger, V. A., Sinnett, S., & Vibell, J. (2022). Sound-modulations of visual motion perception implicate the cortico-vestibular brain. NeuroImage, 257:119285, 1-11. <u>https://doi.org/10.1016/j.neuroimage.2022.1192</u> 85

Neuroscience of Cognition, Affect and Motivation (N-CAM) Laboratory

Principal Investigator: Professor Benjamin BECKER

Our Lab

Emotional experiences and motivational processes significant personal most accompany our experiences and are evolutionary vital for survival. Dysregulations in these processes represent hallmarks of the most prevalent mental disorders, including depression and stress-related disorders. The Neuroscience of Cognition, Affect and Motivation (N-CAM) and the Affect Motivation (BAM) laboratories led by Prof. Benjamin Becker aim at determining how the brain regulates emotional and motivational experiences and how these processes can be improved using novel brain-inspired interventions with the aim to develop innovate and better treatments for mental disoders. To this end the team capitalizes on an of cognitive-affective entire array and computational neuroscience methods, particularly advanced neuroimaging in combination with AIinspired neural decoding, meta-analytic and transdiagnostic patient studies and precision neuromodulation, including real-time fMRI neurofeedback and neuropeptides. The team is inherently multidisciplinary and truly international with members from Hong Kong, Mainland China, Germany, Italy, Ghana and Kenya and established collaborations that cut across traditional borders and disciplines.

Recent Publications

- Gan X, Zhou F, Xu T, Liu X, Zhang R, Zheng Z, Yang X, Zhou X, Yu F, Li J, Cui R, Wang L, Yuan J, Yao D, Becker B (2024) A neurofunctional signature of subjective core disgust generalizes to oral distaste and sociomoral contexts. Nature Human Behaviour (in press)
- Xu T, Chen Z, Zhou X, Wang L, Zhou F, Yao D, Zhou B, Becker B (2024) The central renin angiotensin II system – a genetic pathway, functional decoding and selective target engagement characterization in humans. Proceedings of the National Academy of Sciences of the United States of America (PNAS) 121:8
- Liu X, Jiao G, Zhou F, Kendrick KM, Yao D, Xiang S, Jia T, Zhang X, Zhang J, Feng J, Becker B (2024) A neural signature for the subjective experience of threat anticipation under uncertainty. Nature Communications 15:544

Research Interests

- How does the brain regulate the subjective experience of emotions, including fear, disgust, anxiety, unfairness and love?
- Can we use AI-inspired decoding to precisely read these emotions from brain activity in humans?
- Can we target these brain processes to enhance emotion regulation and motivation?
- Which role do neuropeptides such as oxytocin, vasopressin and angiotensin play in these processes?
- Can neuropeptides or brain computer interface (BCI) based trainings help to treat depression and stress-related disorders

- Montag C, Marciano L, Schulz PJ, Becker B (2023) Unlocking social media's brain secrets through neuroscience. Trends in Cognitive Sciences 27:12
- Xu T, Zhou X, Kanen JW, Wan L, Chen Z, Zhang R, Jiao G, Zhou F, Zhao W, Yao S, Becker B (2023) Angiotensin blockade enhances motivational reward learning via enhancing ventral striatal prediction error and frontostriatal communication. Molecular Psychiatry 28:4

Research Opportunities

For research opportunities, please contact bbecker@hku.hk

Social & Cognitive Neuroscience Laboratory (SCNLab)

Principal Investigator: Professor Xiaoqing HU

Our Lab

Our research aims at understanding how we remember and forget about our past experiences, and the neurocognitive processes supporting these memory dynamics. One fundamental assumption of this research is that memory plays a central role in shaping our preferences and beliefs, and in guiding our judgments and behaviors. Our research aims to elucidate how motivational, emotional and cognitive processes may influence memory processes. Of particular interests, we consider sleep as an indispensable component to complete our understanding of memory. We mostly employ EEG, behavioral and online studies in our research.

Current Research Projects

- Motivated Forgetting, Belief and Attitude
- Sleep and Memory Dynamics
- Memory Control
- Emotion Regulation

Recent Publications

- Chen, D., Xia, T., Yao, Z., Zhang, L., & Hu, X.* (2024). Modulating social learning-induced evaluation updating during human sleep. npj Science of Learning, 9, 43, <u>https://doi.org/10.1038/s41539-024-00255-5</u>
- Lin, X., Chen, D., Liu, J., Yao, Z., Xie, H., Anderson, M.*, & Hu, X.* (2024). Observing the suppression of individual aversive memories from conscious awareness. Cerebral Cortex, 34(6), bhae080,
 - https://doi.org/10.1093/cercor/bhae080
- Varma, M. M. #, Zeng, S. #, Singh, L., Holmes, E. A., Huang, J., Chiu, M, H., & Hu, X.* (2024). A systematic review and meta-analysis of experimental methods for modulating intrusive memories from lab-analogue trauma exposure in non-clinical population. Nature Human

Research Interests

- Sleep: How sleep shapes our memories, emotions and mental wellness, and how to manipulate memory and emotion during sleep?
- Memory: How memories are acquired, updated, corrected, and retrieved, and how unwelcome memories can be controlled and forgotten?
- Social Learning: How we know about ourselves, how we acquire likes and dislikes, and how we learn from others?

More Inforamtion



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https://doi.org/10.1038/s41562-024-01956-y

- Xia, T., Chen, D., Zeng, S., Yao, Z., Liu, J., Qin, S., Paller, K.A., Torres-Platas, S. G., Antony, J.W., & Hu, X.* (2024) Aversive memories can be weakened during human sleep via the reactivation of positive interfering memories. Proceedings of the National Academy of Sciences, 121(31), e2400678121, <u>https://doi.org/10.1073/pnas.2400678121</u>
- Yao, Z., Xia, T., Wei, J., Zhang, Z., Lin, X., Zhang, D., Qin, P., Ma, Y.*, & Hu, X.* (2024). Reactivating cued approached positive personality traits during sleep promotes positive self-referential processing. iScience.27(7), 110341.
 <u>https://doi.org/10.1016/j.isci.2024.110341</u>

The Cognitive Neuroscience Laboratory of Language Learning

Principal Investigator: Professor Fan CAO

Research Interests

research include reading interests Our development and disorders, second language learning, as well as behavioural intervention in individuals with ASD. We study these research questions as a way to understand neural plasticity. We are interested in the neural mechanisms underlying these developmental and learning disorders, as well as how brain structure and function change following behavioural intervention.

Current Research Projects

- Neural responsiveness to intervention in Chinese children and adults with reading disability
- Prognosis and brain developmental changes in Chinese developmental dyslexia
- Critical period in foreign speech imitation
- Figurative language comprehension in adolescents with high functioning ASD

Research Methods

fMRI





fnirs

Recent Publications

 Feng G*, Yan X, Shen L, Perkins K, Mao J, Wu Y, Shi L, Cao F. (2023). Distinct neural correlates of poor decoding and poor comprehension in children with reading

EEG



tDCS+Fnirs

More Information

For research opportunities please contact fancao@hku.hk

- disability. Cerebral Cortex. 33, 3239-3254.doi: 0.1093/cercor/bhac272.
- Wu Y*, Feng G, Yan X, Perkins K, Liu L, Yan X, Cao F. (2022). Reduced pattern similarity in brain activation during orthographic processing in children with developmental dyslexia. Brain and Language. 235, 105201.
- Yan X*, Jiang K, Li H, Wang Z, Perkins K, & Cao F. (2021). Convergent and divergent structural and functional brain abnormalities associated with developmental dyslexia. eLife. https://doi.org/10.7554/eLife.69523
- Cao F, Yan X, Yan X, Zhou H, Booth JR. (2021) Reading disability in Chinese children learning English as an L2. Child Development. 92(2): e126-e142.
- Kim S*, Liu L, Liu L, Cao F. (2020). Neural representational similarity between L1 and L2 in spoken and written language processing. Human Brain Mapping. 41(17):4935-4951. doi: 10.1002/hbm.25171.

The State Key Laboratory of Brain and **Cognitive Sciences**

Director: Professor Tatia Mei-chun LEE

Our Lab

In 2005 October, with the approval of the Ministry of Science and Technology of China, The University of Hong Kong established the State Key Laboratory of Brain and Cognitive Sciences (SKLBCS), a strategic platform for cutting-edge research on human neuroscience. The SKLBCS focuses on understanding and unravelling the neuroplastic underpinnings of the neurocognitive and affective functions regulating and promoting the human brain and psychological health.

The SKLBCS adopts an interdisciplinary and multilayer research approach to integrate animal and human research findings to understand the neural underpinnings of human cognition and emotion, and, furthermore, the influence of the biopsychosocial environments these on neurocognitive and affective processes regulating the brain and psychological health.

Research Platforms

Recent Publications

- Subtyping at-risk adolescents for predicting response toward insomnia prevention program. Chen, S.-J., Li, S. X., Zhang, J., Lam, S. P., Chan, J. W. Y., Chan, K. C.-C., Li, A. M., Morin, C. M., Wing, Y. K., & Chan, N. Y. (2023). Journal of Child Psychology and Psychiatry, and Allied Disciplines. https://doi.org/10.1111/jcpp.13904
- Multimodal brain connectome-based prediction of suicide risk in people with late-life depression. Gao, M., Wong, N. M. L., Lin, C., Huang, C.-M., Liu, H.-L., Toh, C.-H., Wu, C., Tsai, Y.-F., Lee, S.-H., & Lee, T. M. C. (2023). Nature Mental Health, 1(2), 100–113. https://doi.org/10.1038/s44220-022-00007-7
- Linking the past to the future by predictive processing: Implications for psychopathology. Jin, J., Jonas, K., & Mohanty, A. (2023). Journal of Psychopathology and Clinical Science, 132(3), 249-262. https://doi.org/10.1037/abn0000730
- Updating memories of unwanted emotions during human sleep. Xia, T., Yao, Z., Guo, X., Liu, J., Chen, D., Liu, Q., Paller, K. A., & Hu, X. (2023). Current Biology: CB, 33(2), 309-320.e5. https://doi.org/10.1016/j.cub.2022.12.004

InnoCentre of Clinical Neuropsychology

• The Innocentre of Clinical Neuropsychology is the translational arm of the SKLBCS. The goal is to develop and validate potential diagnostic and intervention protocols for patients suffering from neurodegenerative and/or neurocognitive/affective changes deficits.

Laboratory of Sleep Sciences

• The Sleep Research Unit endeavours to understand how sleep affects our daily function and our physical and mental wellbeing. Our ultimate goals are to translate research into practice and to inform the development of treatments and interventions to improve sleep and health.

Neuroimaging Unit

• The Neuroimaging Unit is equipped with a 3T MRI scanner for neuroimaging research.

Wet Lab

• The Wet Lab is equipped with commonly used equipment for cellular, biochemical and molecular experiments including: Biological Safety Cabinet II (BSC II), MiniAMP Plus Thermal Cycler, ID3 Microplate Reader, Low Temperature Centrifuge, and Fluorescent Microscopic, etc.

• Angiotensin blockade enhances motivational reward learning via enhancing striatal prediction signaling and frontostriatal error communication. Xu, T., Zhou, X., Kanen, J. W., Wang, L., Li, J., Chen, Z., Zhang, R., Jiao, G., Zhou, F., Zhao, W., Yao, S., & Becker, B. (2023). Molecular Psychiatry, 28(4),1692–1702. https://doi.org/10.1038/s41380-023-02001-6

More information





Child and School Psychology Laboratory

Principal Investigator: Professor Kathy Kar-man SHUM

Our Lab

The Child and School Psychology Laboratory is dedicated to exploring language and socioemotional development and developing early interventions to promote children's wellbeing. Our goal is to support schools and parents in creating nurturing environments that foster the growth and development of children and adolescents. We welcome motivated students interested in our projects to join our team!

Current Research Projects

- Jockey Club Keen and Active Kids Project
- Effects of near-infrared spectroscopy neurofeedback training coupled with virtual reality technology in children with ADHD
- Social coping strategies across autistic and non-autistic people
- Development of emotion regulation among school-aged children with ADHD

Research Internship

- JCKAK Helpers recruitment
- Lab Interns recruitment

Recent Publications

- Zheng, Q., & Shum, K. K. M. (2024). Brief Report: A randomized controlled trial of a digital working memory intervention for preschoolers displaying ADHD symptoms. Journal of Autism and Developmental Disorders. <u>https://doi.org/10.1007/s10803-023-</u> 06213-1
- Chan, W. W. Y., Shum, K. K. M., Downs, J., & Sonuga-Barke, E. (2024). An experimental task to measure preschool children's frustration induced by having to wait unexpectedly: The role of sensitivity to delay and culture. Journal of Experimental Child Psychology, 237, 105763. <u>https://doi.org/10.1016/j.jecp.2023.105763</u>
 Yeung, K. Y., Chan, T. C., Chan, H. Y., Shum, K. K. M., & Tso, R. V. Y. (2023). Word reading transfer in two distinct languages in reading interventions: How Chinese-English bilingual children with reading difficulties learn to read. Research in Developmental Disabilities, 137, 104501.

Research Interests

- Reading acquisition
- Biliteracy development
- Early childhood intervention
- Socioemotional development
- Autism spectrum disorder
- Attention-deficit/hyperactivity disorder

More Information



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https://doi.org/10.1016/j.ridd.2023.104501

- Shum, K. K. M., Wong, R. M. F., Au, A. H. C., & Au, T. K. (2022). Autism spectrum disorder screening in Chinese-language preschools. Autism, 26(2), 545-551.
 <u>https://doi.org/10.1177/13623613211039373</u>
- Qiu, C., & Shum, K. K. M. (2022). Relations between caregivers' emotion regulation strategies, parenting styles, and preschoolers' emotional competence in Chinese parenting and grandparenting. Early Childhood Research Quarterly, 59, 121-133. <u>https://doi.org/10.1016/j.ecresq.2021.11.012</u>

Cognitive Development Laboratory

Principal Investigator: Professor Terry Tin-Yau WONG

Our Lab

The work in our lab focuses on children's and adolescents' cognitive development. We examine how various cognitive skills develop, and how they are related to academic achievement in mathematics and science domains. We also develop interventions that aim to improve children's and adolescents' cognitive skills

Current Research Projects

- Development of a locally standardized assessment tool for identifying children with mathematics learning disabilities
- Development of a game-based electronic learning platform for support children's mathematics learning
- Improving arithmetic principle knowledge through structurally aligned arithmetic exercises.
- Exploring the causal relation between spatial

Research Interests

The research interests in our lab includes:

- The relationship between various cognitive skills (e.g., spatial skills, reasoning skills) and mathematics and science achievement
- The cognitive profiles of children with mathematics learning difficulties
- The development of game-based interventions that target children's and adolescents' cognitive skills

Recent Publications

- Leung, C. O.-Y.#, & Wong, T. T.-Y. (2023). How are spatial ability and math related? The mediating roles of numerical magnitude knowledge, understanding of arithmetic operations, and word-problem representation. Journal of Educational Psychology, 115(7), 969-984.
- Wong, T. T.-Y., & Kwan K. T.# (2023). The sums are larger than their natural number addends: Relation to operands understanding predicts growth in arithmetic/algebraic problem-solving. Developmental Psychology, 59(9), 1645-1651.
- skills and math competence through a gamebased spatial skills training: A randomized controlled trial
- A longitudinal investigation on the relation between logical reasoning and mathematical competence

Research Opportunities

Our lab is currently running several electronic learning platforms that aim to improve the mathematics learning of junior primary school students. Interested parties may visit our website (see below) and leave your contact there for further details.

More Information





Lab's Website Electronic learning platforms

- Wong, T. T.-Y., & Yip, E. S.-K.# (2023). What is the unknown? The ability to identify the semantic role of the unknown from word problems longitudinally predicts mathematical problem solving performance. Contemporary Educational Psychology, 73, 102183.
- Tong, C. K.-Y.#, Yip, E. S.-K.#, & Wong, T. T.-Y. (2023). Examining the unique contributions and developmental stability of individual forms of relational reasoning to mathematical problem solving. Contemporary Educational Psychology, 73, 102181.
- Yip, E. S.-K.#, Wong, T. T.-Y., & Kwan, K. T. # (2023). The relation between complement understanding and computational skills: A random intercept cross-lagged panel model. Developmental Psychology, 59(3), 431-441.









Multiple Ms (i.e., Motherhood, Marriage, Maltreatment, & Minority) (M&M) Laboratory

Principal Investigator: Professor Hongjian CAO

Our Lab and Interests

Broadly, this lab primarily focuses on research concerning: (a) maternal adaptation (e.g., perinatal psychopathology) during the transition to parenthood and its implications for child and parental development over the lifespan; (b) early parental emotion socialization (especially their responses to child distress such as crying) and child development from infancy through early adolescence; (c) early childhood adversities (especially psychological maltreatment and extreme [economic] deprivation) and subsequent adjustment over the life course from developmental cascades perspective; (d) (newlywed) couples' relationship well-being and its key predictors, especially in historically underrepresented, non-Western family systems; and (e) parent-child and within relationships socially couple disadvantaged/marginalized minority family systems, particularly LGBTQ+ families.

In addition, we also conduct some research on: media use and child development (e.g., child and adolescent screen time, problematic cell phone use, Internet gaming disorder); the implications of family transitions for child development (especially parental divorce/separation); the implications of parental navigation of work-family issues for their psychological well-being and parental functioning; career development guidance (e.g., careerrelated parenting) during adolescence et al.

Research Opportunities

We are always looking for highly self-motivated students with aspirations for future academic careers. Feel free to contact Dr. Cao via email (<u>hjcao@hku.hk</u>).

Recent Publications

- Cao, H., Zhou, N., & Leerkes, E. M. (2023). Primiparous mothers' parenting self-efficacy in managing toddler distress: Childhood nonsupportive emotion socialization, adult attachment style, and toddler temperament as antecedents. Emotion, 23(8), 2205– 2218. https://doi.org/10.1037/emo0001233
- Cao, H., Leerkes, E. M., & Zhou, N. (2023). Origins and development of maternal self-efficacy in emotionrelated parenting during the transition to parenthood: Toward an integrative process framework beyond Bandura's model. Psychological Review, 130(6), 1612– 1652. https://doi.org/10.1037/rev0000382

Current Research Projects

- Some of the ongoing research projects in this lab include:
- Early Exposure to Life Adversities (e.g., Child Maltreatment, Peer Victimization, Deprivation) and Subsequent Development over the Life Course from a Developmental Cascades Perspective;
- Media Use, Media-Related Parenting, Daily Affects, Physiological Activities (e.g., autonomic regulation and sleep quality), and Mental Health among Young Children, Adolescents, and Emerging Adults;
- Minority Stress and Personal/Relational/Familial Well-Being among Sexual and Gender Minority (LGBTQ+) People;
- Parental Socialization of Child Positive Emotions
- (Chinese) Couple Relationship Well-being and its Key Determinants.

- Cao, H., Zhou, N., Buehler, C., Li, X., Liang, Y., & Chen, Y⁺. (2023). Mothers' work-to-family conflict, depressive symptoms, and parental role functioning: A five-wave, cross-lagged panel model from infancy through middle childhood. Family Relations. Advance online publication.https://doi.org/10.1111/fare.12931
- Cao, H., Fine, M. A., & Zhou, N. (2022). The divorce process and child adaptation trajectory typology (DPCATT) model: The shaping role of predivorce and postdivorce interparental conflict. Clinical Child and Family Psychology Review, 25(3), 500-528.https://doi.org/10.1007/s10567-022-00379-3
- Cao, H., Ma, R.†, Li, X., Liang, Y., Wu, Q., Chi, P., Li, J.-B., & Zhou, N. (2022). Childhood emotional maltreatment and adulthood romantic relationship well-being: A multilevel, meta-analytic review. Trauma, Violence, & Abuse, 23(3), 778–794. https://doi.org/10.1177/1524838020975895

Psychological Science Laboratory

Principal Investigator: Professor Gilad FELDMAN

Our Lab

The lab is focused on social psychology and and decision-making, judgement implementing and promoting open-science. Broadly, we aim to understand why people make decisions and choices in the way that they do. We explore topics such as biases and heuristics, folk psychology, and lay-beliefs (e.g., agency and choice). We support the open-science movement and recent advances in psychological science to conduct preregistered replications and pre-registered meta-analyses. Since 2018, we've been running a massive student-led open-science pre-registered replications and extensions project.

Research Interests

• Judgment and decision making, heuristics and biases

Recent Publications

- Jacobs, T., Wang, M., Leach, S., #Siu, H., #Khanna, M., #Chan, K., #Chau, H., Tam, Y., & ^Feldman, G. (2024). Revisiting the motivated denial of mind to animals used for food: Replication and extension Registered Report of Bastian et al. (2012). International Review of Social Psychology. Endorsed by Peer Community in Registered Reports. DOI: https://doi.org/10.24072/pci.rr.100545
- Chan, C., & ~Feldman, G. (2024). The impact of Empathy on Forgiveness: Replication and extensions Registered Report of McCullough et al. (1997)'s Study 1. Endorsed by Peer Community in Registered Reports. DOI: 10.24072/pci.rr.100444
- *Maier, M., *Wong, Y., & ^Feldman, G. (2023). Revisiting and Rethinking the Identifiable Victim Effect: Replication and Extension of Small, Loewenstein, and Slovic (2007). Collabra:Psychology, 9 (1): 90203 https://doi.org/10.1525/collabra.90203 [Article] [Preprint] [Open materials/data/code] [Open peer review] [Open access] • *Ziano, I., *Yeung, S., *Cheong, S., Shi, J., & ~Feldman, G. (2023). "The Effort Heuristic" revisited: Mixed results for replications of Kruger et al. (2004)'s Experiments 1 and 2. 9 (1): Collabra:Psychology, 87489. https://doi.org/10.1525/collabra.87489 [Article] [Preprint] [Open materials/data/code] [Open peer review] [Open access] • *Aiyer, S., *Kam, H., *Ng, K., Young, N., Shi, J., & -Feldman, G. (2023). Outcomes affect evaluations of decision quality: Replication and extensions of Baron and Hershey's (1988) Outcome Bias Experiment 1. International Review of Social Psychology, 36(1): 12, 1-16. https://doi.org/10.5334/irsp.751 [Article] [Preprint] [Open materials/data/code] [Open peer review] [Open access]
- Choice, agency, and related lay-beliefs
- Morality and folk psychology
- Personal values
- Helping, giving, & addressing urgent challenges (doing more good and doing good better)

Methodology

- Supporting and implementing openscience
- Mass pre-registered replications and preregistered meta-analyses:

More Information



Social and Cultural Psychology Laboratory (SCPL)

Principal Investigator: Professor Zhansheng CHEN

Research Interests

Our lab's directions mainly focus on:

- Ostracism/social exclusion
- Objectification and sexual objectification
- Aggression and prosocial behavior
- Positive psychology (e.g., humility, compassion, and self-compassion

Current Research Projects

• The Psychology Of The Chinese People: A Large-scale Survey: We are currently working on a very exciting large-scale survey

Recent Publications

- †Shi, J., †Wang, X. [Xijing], †Teng, F. & Chen, Z. (2023). A little appreciation goes a long way: Gratitude reduces objectification. The Journal of Positive Psychology , 18 (4), 627-635. https://doi.org/10.1080/17439760.2022.2053877
- †Zhang, Z., #Chen, Z., †Poon, K. T., & †Jiang. T. (2023). Objectification decreases prosociality: The mediating role of relative deprivation. Frontiers in Psychology, 14, 1120513.
- Junus, A., Kwan, C., Wong, C., Chen, Z., & Yip, P. S. F. (2023). Shifts in patterns of help-seeking during the COVID-19 pandemic: The case of Hong Kong's younger generation. Social Science & Medicine, 313, 115648.
- examining regional differences in China on a series of psychology outcomes.
- "Objectification Decreases Prosocial Behavior: Mediating Roles Of Selfobjectification And Relative Deprivation"
 (funded By General Research Fund): We have two projects testing how various factors influence prosocial behavior.

More Information



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https://doi.org/10.1016/j.socscimed.2022.115648

- †Wang, X. [Xijing], #Chen, Z., Van Tongeren, D.
 R., DeWall, C. N. & Yang, F. (2023). Permitting immoral behavior: A generalized compensation belief hypothesis. British Journal of Psychology, 114(1), 21-38. <u>https://doi.org/10.1111/bjop.12593</u>
- Kwan, C., Wong, C. Chen, Z., & Yip, P. S. F. (2022). Youth bulling and suicide: Risk and protective profiles for bullies, victims, bullyvictims and the uninvolved. International Journal of Environmental Research and Public Health,19(5),2828.

https://doi.org/10.3390/ijerph19052828

Social and Health Psychology Laboratory

Principal Investigator: Professor Cecilia CHENG

Research Interests

My research team is interested in understanding reading, thinking and learning in children and teenagers. We are actively engaged in developing educational interventions to enhance children's learning and reading, especially for children with autism spectrum disorder (ASD) and attentiondeficit/ hyperactivity disorder (ADHD). We work closely with teachers and parents in providing a nurturing environment for the growth and development of children and adolescents.

Current Research Project

Game Over Program

Recent Publications

- Cheng, C., Ebrahimi, O. V., & Luk, J. W. (2022). Heterogeneity of prevalence of social media addiction across multiple classification schemes: Latent profile analysis. Journal of Medical Internet Research, 24, e27000.
- Wang, H., & Cheng, C. (2022). The associations between gaming motivation and internet gaming disorder: Systematic review and meta-analysis. JMIR Mental Health, 9, e23700.
- Cheng, C., Ebrahimi, O.V., & Lau, Y. (2021). Maladaptive coping with the infodemic and sleep disturbance in the COVID-19 pandemic.

Research Internship

The success of our lab depends on the involvement of dedicated undergraduate students. Getting involved with research as an undergraduate is a great way to learn more about psychology and get hands-on experience. Research experience is also valuable for students considering going on to graduate school.

Students interested in applying should send a CV via email (<u>ceci-cheng@hku.hk</u>).

More Information



- Journal of Sleep Research, 30, e13235.
- Cheng, C., Lau, Y., Chan, L., & Luk, J.W. (2021).
 Prevalence of social media addiction across 32 nations: Meta-analysis with subgroup analysis of classification schemes and cultural values.
 Addictive Behaviors, 117, 106845.
- Cheng, C., Wang, H., & Chan, L. (2021). Multiple forms of mass anxiety in Coronavirus Disease-2019 pandemic. Journal of Affective Disorders, 291, 338-343.
- Cheng, C., Wang, H., & Ebrahimi, O.V. (2021).
 Adjustment to a "new normal:" Coping flexibility and mental health issues during the COVID -19 pandemic. Frontiers in Psychiatry, 12, 626197.













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