



34th **IAPCT** Conference

PERTH, AUSTRALIA & ONLINE NOVEMBER 13-15 2024

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Cover Art: Arron Yarran

Conference Schedule – Day 1

Wednesday, November 13th – Preconference Online Programme*

16:30	Laura Hudepohl	How to explain and apply PCT and MOL in an effective way within (therapeutic)
18:30	Session end	
	<i>Extended break</i>	Perth Campus dinner
21:00	Opening	
21:15	Steve Battle	An Information Theoretic Approach to the Test for the Controlled Variable
21:45	Kent McClelland	A PCT view of social institutions
22:15	<i>Coffee break</i>	
22:30	Matias Salgado	PCT and MOL in Spanish. A new hope
22:40	Hugo Cristo Sant'Anna	The Wonder Weeks and the Wonder Toys
23:00	Mick Cooper	From Psychological to Social Change: Using a Hierarchical Model to Develop a Psycho-Political Framework
23:30	<i>Coffee break</i>	
23:45	Henry Yin	The Neural Mechanisms of Online Feedback Control of Reward in Mice
00:15	<i>Session end</i>	

Legend

Blue	Online talks. Talks can be prerecorded (preferably) or presented on zoom. Presenters and audience will be present for the talk + discussion
Green	Local talks in Perth with local presenters + audience. Talks + discussions will be recorded and made available for the online audience afterwards.
Dark green	Local only activities
Purple	Local Watch party includes prerecorded talks from the previous day. Local Perth audience will watch & discuss. Discussions will be recorded and shared afterwards.

* 16:30 Perth = 8:30 London, 9:30 Amsterdam

Conference Schedule – Day 2

Thursday, November 14th – Hybrid program (face to face / online)		
10:00	<i>Session start – Welcome to Country ceremony</i>	
10:30	Arron Yarran, local artist at MaOchre Indigenous Art Gallery	<i>Personal account of recovery</i>
10:50	<i>Coffee break</i>	
11:00	<i>Session start</i>	
	Isabeau Tindall, Aimee Wrightson-Hester, G Anderson, & Warren Mansell	Dynamic Catalysts
11:30	Masaru Kanetsuki, Tomomi Kanetsuki, Warren Mansell, & Eriko Takahashi	Development of the Japanese Version of the Reorganisation of Conflict Scale
11:50	<i>Coffee break</i>	
12:05	Warren Mansell	The Rhythm of Consciousness
12:35	Tauseef Gulrez & Warren Mansell	PCT as a unique machine learning algorithm
13:05	<i>Lunch break</i>	
14:05	David Hart	A Pilot's Journey - personal experience
14:25	<i>Watch party with talks from the online conference</i>	
15:55	<i>Coffee break</i>	
16:10	Pauline Tieleman	Body Wisdom: Interoceptive Control from a PCT perspective
16:30	Robert Griffiths	Applying Perceptual Control Theory principles to improve mental health services: Recent research developments
17:00	<i>Coffee break</i>	
17:15	Tom Merrill	Controlling People in Controlling Environments: Balancing Risk Management and Personal Recovery in Secure Forensic Hospitals
17:45	Jessica Ward, Alicia Brown, Sara Tai, & Warren Mansell	An exploratory case series applying the 'Method of Levels' (MOL) to radical, or non-mainstream, views
18:05	Mueen Abid & Zaqia Bano	Adaptation and Implementation of Trans-diagnostic Intervention to Optimize Mental Health of Young People Living with HIV (YPLHIV) in Pakistan
18:25	<i>Session end</i>	
	<i>Thursday Evening Perth: social programme/time off, no scheduled talks</i>	

Conference Schedule – Day 3

Friday, November 15th – Hybrid program (face to face / online)

10:00	<i>Session start</i>	
	Eva de Hullu	Outdoor workshop: Stepping up and down the hierarchy
11:30	Claire Aldridge	Trainee Experiences of Discovery Talk
11:50	Dag Forssell	Translating PCT & MOL Books
12:00	<i>Coffee break</i>	
12:20	John Kirkland, Mike Saywell, & Mike Smith	PCT's role in bilateral cooperation, notation, intuition, and pedagogy
12:50	Omar Khaliqy	Discovery Talk
13:10	<i>Lunch break</i>	
14:10	Aimee Wrightson-Hester, Greg Tsuklis, Ash Bird, & Alex Mullins	RCT evaluating effectiveness of MYLO, an text-based emulation of Method of Levels, with a student population
14:55	Tom Cochrane	Consciousness, attention, and the motivation-affect system
15:25	<i>Coffee break</i>	
15:40	Warren Mansell (convenor), Bruce Nevin, Eva de Hullu, Andreas Eder, Tom Cochrane	Symposium: Emotion from a PCT Perspective
17:10	<i>Coffee break</i>	
17:25	Susan McCormack	Applying Method of Levels to the Armed Forces Community - too complex to treat!
17:55	Rupert Young	Wind Turbine control
18:15	<i>Session end</i>	
	<i>Friday Evening Perth: conference dinner</i>	

Monday, November 18th – IAPCT Annual Meeting (online)

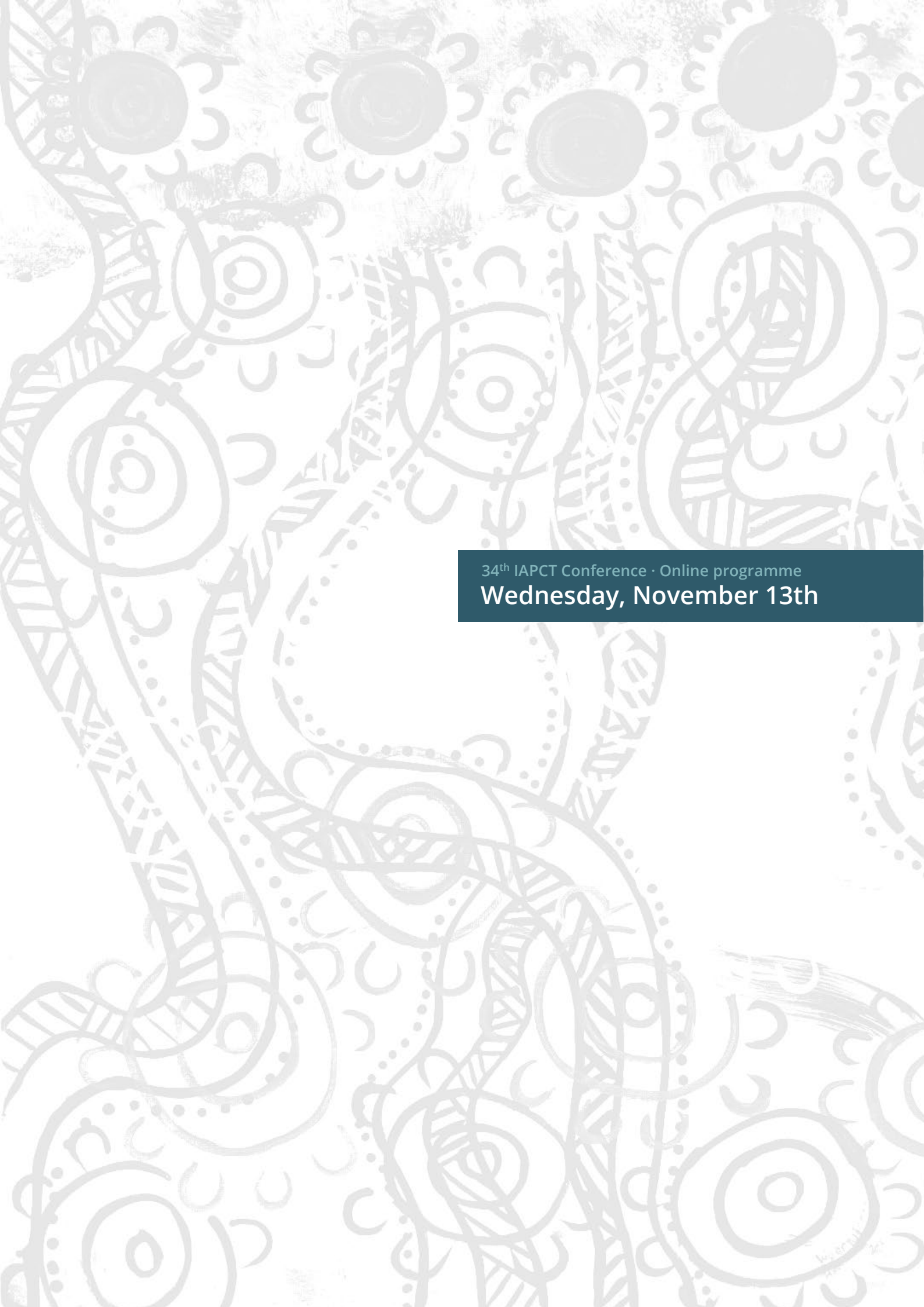
21:00	Presentation of Martin Taylor's books by editorial team	
21:20	IAPCT Annual Meeting	
22:20	Session end	

Time Zone Conversion Wednesday & Thursday

	Perth	Los Angeles	New York	Buenos Aires	London	Amsterdam
UTC time (0)	8	-8	-5	-3	0	1
Wednesday, 13 November 2024, 8:00	Wed 16:00	Wed 00	Wed 03:00	Wed 05:00	Wed 08:00	Wed 09:00
Wednesday, 13 November 2024, 9:00	Wed 17:00	Wed 01:00	Wed 04:00	Wed 06:00	Wed 09:00	Wed 10:00
Wednesday, 13 November 2024, 10:00	Wed 18:00	Wed 02:00	Wed 05:00	Wed 07:00	Wed 10:00	Wed 11:00
Wednesday, 13 November 2024, 11:00	Wed 19:00	Wed 03:00	Wed 06:00	Wed 08:00	Wed 11:00	Wed 12:00
Wednesday, 13 November 2024, 12:00	Wed 20:00	Wed 04:00	Wed 07:00	Wed 09:00	Wed 12:00	Wed 13:00
Wednesday, 13 November 2024, 13:00	Wed 21:00	Wed 05:00	Wed 08:00	Wed 10:00	Wed 13:00	Wed 14:00
Wednesday, 13 November 2024, 14:00	Wed 22:00	Wed 06:00	Wed 09:00	Wed 11:00	Wed 14:00	Wed 15:00
Wednesday, 13 November 2024, 15:00	Wed 23:00	Wed 07:00	Wed 10:00	Wed 12:00	Wed 15:00	Wed 16:00
Wednesday, 13 November 2024, 16:00	Thu 00	Wed 08:00	Wed 11:00	Wed 13:00	Wed 16:00	Wed 17:00
Thursday, 14 November 2024, 2:00	Thu 10:00	Wed 18:00	Wed 21:00	Wed 23:00	Thu 02:00	Thu 03:00
Thursday, 14 November 2024, 3:00	Thu 11:00	Wed 19:00	Wed 22:00	Thu 00	Thu 03:00	Thu 04:00
Thursday, 14 November 2024, 4:00	Thu 12:00	Wed 20:00	Wed 23:00	Thu 01:00	Thu 04:00	Thu 05:00
Thursday, 14 November 2024, 5:00	Thu 13:00	Wed 21:00	Thu 00	Thu 02:00	Thu 05:00	Thu 06:00
Thursday, 14 November 2024, 6:00	Thu 14:00	Wed 22:00	Thu 01:00	Thu 03:00	Thu 06:00	Thu 07:00
Thursday, 14 November 2024, 7:00	Thu 15:00	Wed 23:00	Thu 02:00	Thu 04:00	Thu 07:00	Thu 08:00
Thursday, 14 November 2024, 8:00	Thu 16:00	Thu 00	Thu 03:00	Thu 05:00	Thu 08:00	Thu 09:00
Thursday, 14 November 2024, 9:00	Thu 17:00	Thu 01:00	Thu 04:00	Thu 06:00	Thu 09:00	Thu 10:00
Thursday, 14 November 2024, 10:00	Thu 18:00	Thu 02:00	Thu 05:00	Thu 07:00	Thu 10:00	Thu 11:00
Thursday, 14 November 2024, 11:00	Thu 19:00	Thu 03:00	Thu 06:00	Thu 08:00	Thu 11:00	Thu 12:00

Time Zone Conversion Friday & Monday

	Perth	Los Angeles	New York	Buenos Aires	London	Amsterdam
UTC time (0)	8	-8	-5	-3	0	1
Friday, 15 November 2024, 2:00	Fri 10:00	Thu 18:00	Thu 21:00	Thu 23:00	Fri 02:00	Fri 03:00
Friday, 15 November 2024, 3:00	Fri 11:00	Thu 19:00	Thu 22:00	Fri 00	Fri 03:00	Fri 04:00
Friday, 15 November 2024, 4:00	Fri 12:00	Thu 20:00	Thu 23:00	Fri 01:00	Fri 04:00	Fri 05:00
Friday, 15 November 2024, 5:00	Fri 13:00	Thu 21:00	Fri 00	Fri 02:00	Fri 05:00	Fri 06:00
Friday, 15 November 2024, 6:00	Fri 14:00	Thu 22:00	Fri 01:00	Fri 03:00	Fri 06:00	Fri 07:00
Friday, 15 November 2024, 7:00	Fri 15:00	Thu 23:00	Fri 02:00	Fri 04:00	Fri 07:00	Fri 08:00
Friday, 15 November 2024, 8:00	Fri 16:00	Fri 00	Fri 03:00	Fri 05:00	Fri 08:00	Fri 09:00
Friday, 15 November 2024, 9:00	Fri 17:00	Fri 01:00	Fri 04:00	Fri 06:00	Fri 09:00	Fri 10:00
Friday, 15 November 2024, 10:00	Fri 18:00	Fri 02:00	Fri 05:00	Fri 07:00	Fri 10:00	Fri 11:00
Monday, 18 November 2024, 13:00	Mon 21:00	Mon 05:00	Mon 08:00	Mon 10:00	Mon 13:00	Mon 14:00
Monday, 18 November 2024, 14:00	Mon 22:00	Mon 06:00	Mon 09:00	Mon 11:00	Mon 14:00	Mon 15:00



34th IAPCT Conference · Online programme
Wednesday, November 13th

How to explain and apply Perceptual Control Theory (PCT) and Method of Levels (MOL) in an effective way within (therapeutic) conversations

Laura Hudepohl

This presentation explores innovative approaches to teaching and applying Perceptual Control Theory (PCT) within Method of Levels (MOL) training and therapy. Drawing from experiences in the Netherlands, where the course 'How to be a conversational partner' has been developed for psychologists and interested practitioners, we address the challenge of presenting PCT and MOL in an accessible, practical manner that promotes sustained application.

The workshop will outline our pedagogical strategy, which integrates foundational PCT and MOL principles with insights from Ger Schurink, the psychotherapist who introduced MOL to the Netherlands, and the presenter's own contributions. Attendees will gain insight into the theoretical framework, core principles, and practical tools employed in our approach.

The session will include a demonstration of an MOL session with a volunteer participant, followed by guided peer practice exercises. This hands-on approach aims to provide attendees with immediate experience in applying the techniques discussed.

An Information Theoretic Approach to the Test for the Controlled Variable

Steve Battle

The Test for the Controlled Variable (TCV) quantifies the degree of control a system has on a controlled variable. The TCV can help to identify the controlled variables around which behaviour is organised, as these variables are protected from disturbance by the corrective actions of the control system (Marken, 2014). The Root Mean Squared Error (RMSE) is typically used to quantify the error between a perception and a reference value over time. In practice, the RMSE must be normalised to allow comparison between different model hypotheses. Powers also used correlation tests, but this approach cannot account for a constant offset between reference and perception (Marken, 2021). In this talk I explore an alternative approach to the TCV that measures the information content of variables at the control surface.

The first aim is to quantify stability in the face of disturbance. We ask the question, “is the system stable?” Stability implies certainty, and therefore higher entropy than a comparable unstable system. This entropy is measured in the number of bits required to encode the controlled variable.

However, stability is not direct evidence of control. We need to ask, “is the system controlled?” A marble will consistently roll to the bottom of a bowl; this system is stable but uncontrolled, the result of basic physics. To mitigate this, the second aim is to break the hypothesised control loop, to record the baseline activity, and then calculate entropy relative to this baseline. A controlled variable should have higher entropy (certainty) compared with the baseline.

A central premise of PCT is that the controlled variable is perceived by the control system (Powers, 1981). The third aim is to distinguish between feedback control and feed-forward/open-loop control, where no such perception exists (the input would be a secondary independent variable). If we have access to the sensory data available to the control system it is possible to quantify the mutual information between the controlled variable and the sensor data. We can ask the question, “can the controlled variable be perceived?”

References

Marken, R. S. (2014). Testing for controlled variables: a model-based approach to determining the perceptual basis of behavior. *Attention, Perception, & Psychophysics*, 76(1), 255–263.

Marken, R. S. (2021). *The Study of Living Control Systems: A Guide to Doing Research on Purpose*. Cambridge University Press.

Powers, W. T. (1981). *Behavior, the Control of Perception*. Aldine.

A PCT view of social institutions

Kent McClelland

Social institutions, like racism, sexism, capitalism, politics, the economy, education, religion, healthcare, agriculture, science, technology, and the media, are among the most complex phenomena in the sociological landscape. The history of these large-scale structural and cultural features stretches over long periods of time, and they have come to extend widely across space. In the modern world, these phenomena provide the context for the lives of nearly everyone on the planet. Can we use PCT to account for the emergence of such complex phenomena from the actions of individual humans seeking only to control their own perceptions? My presentation offers a simplified framework for thinking about social institutions from a PCT perspective. I propose that populations of people create and maintain social institutions by using three concurrent layers of collective control, parallel to the layered hierarchy of control systems in the human brain: (1) a cultural infrastructure of abstract, symbolic, and interpretive concepts and ideas by which people attribute meaning to some important phase of their shared existence; (2) a behavioral structure of patterned and repetitive actions by which people enact this phase of their daily lives; and (3) a physical infrastructure of physical objects, tools, and other modifications of their living and working environment that result from the collective control of this phase of their shared existence. These three layers of control, I propose, are tightly interconnected, and I illustrate these three layers of control and their interconnections by using the example of the social institution of racism. I conclude my presentation by turning to the issue of change in social institutions. Social institutions are valuable, I argue, because they mitigate some the conflicts inherent in collective control by helping people to align around a uniform set of references for thought and action for controlling some phase of their shared existence. Social institutions, however, do not eliminate conflict completely, because they create differences in social power by giving advantages to some social groups over others, and those power differentials result in disturbances for the people with less power and thus less control over their lives, provoking calls for social change. Looking at the dimension of time, I compare the durability of the components of the three layers of institutional control and argue that social institutions, because they are so widespread with so many people involved, have considerable inertia and resistance to change. Reformers should realize that any fundamental change, to be effective, has to occur in all three layers of institutional control at once, and that nothing is likely to happen quickly. Nevertheless, social institutions are dynamic phenomena that undergo constant change at the margins, despite the natural tendency of people's control behavior to be conservative, resisting the unexpected and restoring the familiar. I conclude by noting that, because social institutions are always changing, even relatively small changes can cumulate to effect dramatic change in a social institution within the space of a lifetime.

PCT and MOL in Spanish. A new hope

Matias Salgado

In response to the rising interest in PCT and MOL among Spanish-speaking professionals, several developments have occurred this year:

- Conducted 3 PCT and MOL courses at a public university (UBA).
- Integrated an PCT and MOL course into the Buenos Aires City Government's post-graduate training.
- Delivered talks and workshops at conferences across Argentina.
- Published dissemination articles in both a university journal and a Madrid-based journal.
- Initiated a Single Case Series design study on MOL for ASD (Autism Spectrum Disorder) in adults and other disorders, with support from the Buenos Aires City Government.
- Held the 2nd IAPCT pre-conference in Buenos Aires.

Encouraging feedback from psychologists suggests promising opportunities for dissemination in 2025 and a new hope for Clinical Psychology within the Spanish-speaking community. We encourage the IAPCT community's participation in advancing these efforts.

The Wonder Weeks and the Wonder Toys

Hugo Cristo Sant'Anna

This flash-talk is an experience report about teaching Perceptual Control Theory (PCT) to Brazilian college students. The Portuguese translation of Frans Plooij's and Hetty Van De Rijt's "The Wonder Weeks" is the only full-length PCT-related book available in Brazil. "As Semanas Mágicas" was selected as the textbook for the course "Psychology and Design" at the Federal University of Espírito Santo (Ufes) in Vitória, ES. From August to December 2024, a class of 30 undergraduate Design students had their first introduction to PCT, following the developmental leaps discussed in the book. Weekly group seminars were held, presenting an overview of each chapter along with a design proposal for a toy that explores the new cognitive abilities described by Plooij and Van De Rijt in relation to the first nine levels of the PCT hierarchy: Sensations (around week 4) – "The Sensations Mobile"; Patterns (week 7) – "Interactive Mobile"; Transitions (week 11) – "Shake-Shake"; Events (week 14) – "Shake Balloon"; Relationships (week 22) – "Surprise Box"; Categories (week 33) – "Fits In"; Sequences (week 41) – "Little Train"; Programs (week 51) – "Origami"; and Principles (week 59) – "Mini Chef". Systems (around week 70), the last level of the hierarchy, didn't get a specific toy but was discussed as the review and closing of the course. The toy design proposals are based on low-cost, easily accessible materials, such as paper, cardboard, plastic bottles, beans, and can be assembled with simple tools like scissors, glue, and masking tape. Posters with the required materials and assembly instructions are freely available at <https://bit.ly/design-ufes-wonder-weeks> (in Portuguese) and are currently on exhibition at the Design Department building at Ufes. The students' aim with the instruction posters was that the toys could be built by the parents, with increasing participation of their child.

From Psychological to Social Change: Using a Hierarchical Model to Develop a Psycho-Political Framework

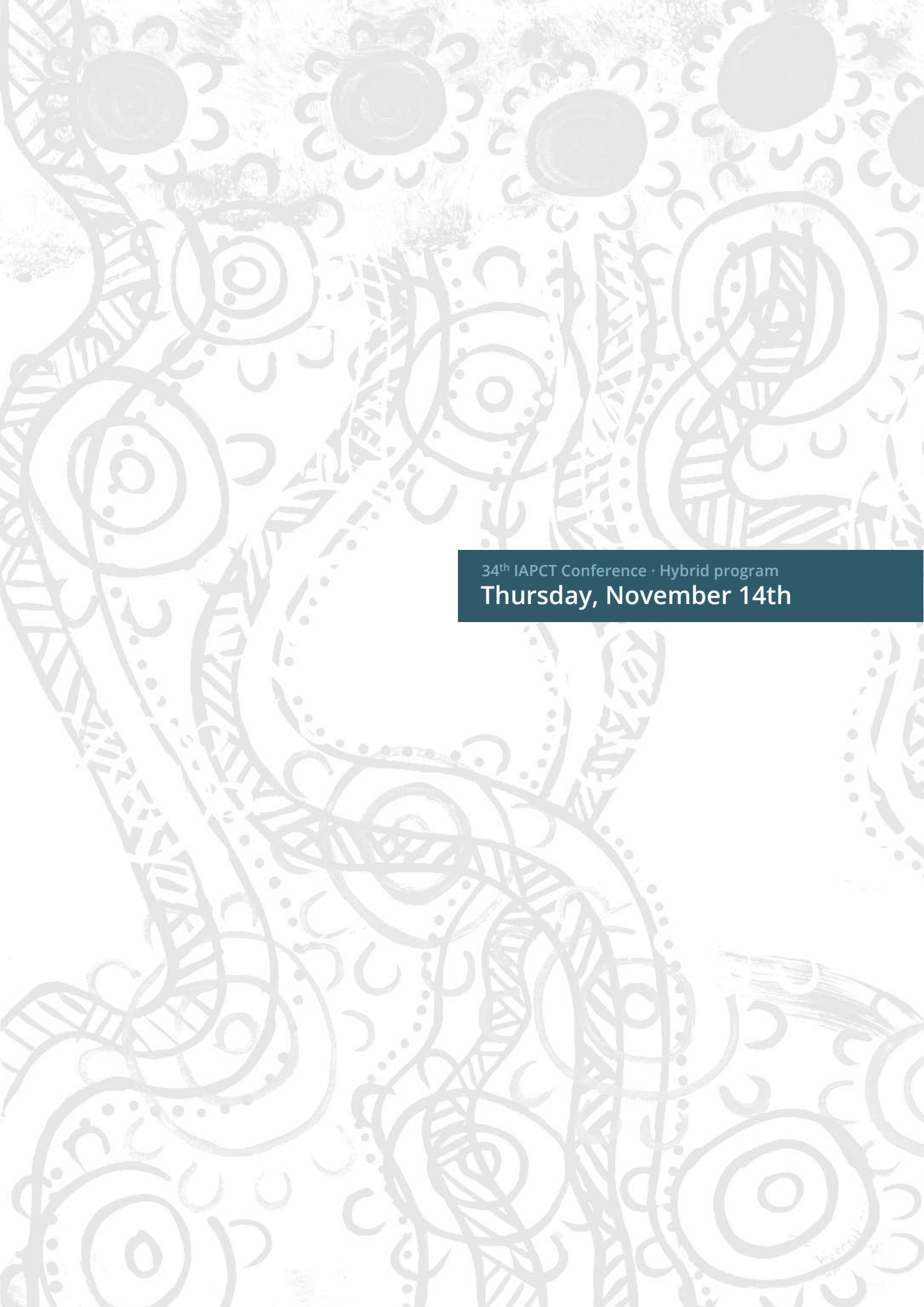
Mick Cooper

In this talk, I will describe how I have used a hierarchical feedback model, akin to Powers's Perceptual Control Theory, as the basis for a unified framework for psychological and social change. As discussed in my books, 'Integrating Counselling and Psychotherapy: Directionality, Synergy, and Social Change' (Sage, 2019) and 'Psychology at the Heart of Social Change: Developing a Progressive Vision for Society' (BUP, 2023), I have grounded this framework in an understanding that people are active, purpose-oriented agents who strive to achieve highest-level wants and needs, and that psychological distress emerges from a failure to realise such 'directions'. Because such failure can involve both socio-political (e.g., poverty, racism) and psychological factors (e.g., conflicting wants and needs, or inefficient means of actualising them), psychological distress, and healing, can be understood in terms of both 'inner' and 'outer' processes. Hence, hierarchical feedback models allow for an approach towards change that recognises, and integrates, individual psychotherapeutic treatments (e.g., Methods of Levels), along with broader political activity.

The Neural Mechanisms of Online Feedback Control of Reward in Mice

Henry Yin

We have developed a new behavioral task in mice that allows us to study neural mechanisms underlying online feedback control. In this task, head-fixed mice can control the position of a reward spout by moving a lever. Reward is only delivered when the spout is at a specific location. We showed that mice can easily control the spout position using the lever. Disturbances to spout position are resisted systematically by varying lever positions, while maintaining a relatively constant spout position. We also recorded neural activity from the primary sensory and motor cortical areas and their projection targets in the striatum as mice perform this control task. We found many neurons with firing rates that are precisely modulated by disturbances; they seem to provide analog output signals required in closed loop control of reward spout position.



34th IAPCT Conference · Hybrid program
Thursday, November 14th

Dynamic Catalysts

Isabeau Tindall, Aimee Wrightson-Hester, G Anderson & Warren Mansell

Current mental health services often operate in silos based on diagnosis/group membership, leading to fragmented care and increased strain on individuals and systems. Additionally, the reliance on specialist mental health professionals' limits accessibility to necessary support. Our project explored solutions to these challenges by identifying the catalysts of 'turning points' toward mental health recovery – the pivotal elements that drive recovery after significant mental health challenges. This methodology is underpinned by a conceptual model based on perceptual control theory. We also wanted to finalise the methodology and materials used to identify these catalysts. Specifically, our novel interview guide used during semi-structured interviews with at-risk individuals, and the use of our journey-mapping methodology.

Development of the Japanese Version of the Reorganisation of Conflict Scale

Masaru Kanetsuki, Tomomi Kanetsuki, Warren Mansell, & Eriko Takahashi

One of the key principles in Perceptual Control Theory (PCT; Powers, 1973) is reorganisation. Reorganisation is a learning algorithm that randomly changes properties within the control systems until the error is eliminated when the error persists. Reorganisation is considered a promising mechanism for resolving prolonged psychological distress. A psychological scale related to reorganisation is the Reorganisation of Conflict Scale (RoC; Higginson, 2007). The RoC was developed based on qualitative research with individuals who had resolved psychological distress (Higginson & Mansell, 2008) and clinical observations during sessions of the Method of Levels, a psychotherapy based on PCT (Higginson, 2007). The RoC has been validated for reliability and validity (Bird, 2013; Morris, 2016; Morris et al., 2023) and has been used to elucidate mechanisms of psychological change across diagnoses (Isabeau et al., submitted), making it a valuable instrument. It is hoped that the RoC will be translated into various languages and utilized in research. A future research question to consider is whether there are cultural differences in the psychological characteristics associated with reorganisation. This presentation reports on the development process of the Japanese version of the RoC (RoC.j). The RoC.j was created following the ISPOR Task Force guidelines (Wild et al., 2005). The hypothesis of this study is that the RoC.j will demonstrate reliability and validity comparable to that of the original RoC. To assess its validity, an online survey was conducted in March 2024 with Japanese young adults aged 20 to 25. The scales used were the RoC.j, the Japanese version of the Focusing Manner Scale version a (FMS ver.a.j.; Aoki, 2012), the revised version of the Japanese translated Cognitive Emotion Regulation Questionnaire (CERQ-RJ; Urano et al., 2022), the Japanese version of the Repetitive Thinking Questionnaire (RTQ; Tanaka & Sugiura, 2014), and the Short-form Japanese version of the Depression Anxiety Stress Scale (DASS-21; Murakami et al., 2022). By examining the basic statistics of the RoC.j and its correlations with other scales, we will compare it with the original RoC. Based on the findings of Isabeau et al. (submitted), it is expected that the subscale "reorganisation capacity" of the RoC.j will show a positive correlation with adaptive strategies measured by the FMS and CERQ. Additionally, the subscale "inflexible control" of the RoC.j is anticipated to show a positive correlation with maladaptive strategies measured by the RTQ and stress responses measured by the DASS. Statistical results will be presented during the session.

The Rhythm of Consciousness

Warren Mansell

Synchrony is never exact; rather it is maintained at a near-critical, metastable state. I will put forward a perceptual control theory (PCT; Powers et al., 1960; Powers, 1973, 2008) framework to attempt to explain the findings with regards to brain rhythms, synchrony, and psychological functioning within consciousness. First, the account will explain how synchrony can both emerge, and be achieved and maintained, through negative feedback control. Second, it may explain how the active sampling and control of input entails specific timeframes at ascending layers of a hierarchical system. These are multi-sensory integration; multisensory control; adaptive control in the context of conflict (primary consciousness), spatiotemporal simulation of a first person perspective (secondary consciousness), and metacontrol (tertiary consciousness). Third, it may explain how secondary consciousness is sustained by various lower level processes that control the rate that novel combinations of input are accessed and combined to allow the individual to perceive and control new aspects of the self and the world. This 'silent pulse' of consciousness (Leonard, 1978) may explain why our conscious mind is constantly busy, as well as helping to model the adaptive 'chaotic edge' of the otherwise structured and synchronous brain to account for the measures of 'sub-critical entropy' in neural electromagnetic activity.

PCT as a unique machine learning algorithm

Tauseef Gulrez & Warren Mansell

Powers (2008) constructed a number of computational models to demonstrate the principles of PCT, culminating in a demonstration of reorganisation of the output gains within 14 parallel control units to enable the smooth reproduction of a Thai Chi movement specified by the dynamically changing reference signals of a putative higher level control unit. The output gains were initially set at random values, but the perceptual functions of the control system were predetermined, as was the architecture. Later advances have enabled the generation of an effective hierarchical PCT architecture either by a fixed algorithm (Hawker, 2021) or genetic algorithms (Young, 2021). The current project describes the basis of a PCT machine learning approach that builds upon these models and also incorporates elements of a recent PCT model of consciousness (Mansell, 2024). Specifically, the PCT agent should have the following components: (a) an intrinsic system that outputs a signal that is proportionate to current intrinsic error (its preprogrammed motives, resource requirements and needs); (b) the current value of the intrinsic error signal includes 'time since the last novel input', which is included to enable curious exploration; (c) the generation of a 'higher level' control unit, one-at-a-time, whose perceptual function takes as its input a sample of the potential array of all inputs at all levels, thereby potentially perceiving a new variable; (c) the capacity to reorganise the properties of a control unit, one at a time, to reduce intrinsic error; this is based on Powers (2008), but will importantly add the reorganisation of the perceptual function; (d) the capacity to 'decide' between reorganising existing control units versus generate a new 'higher level' control unit; this decision may be based on an index of the duration and intensity of unresolved internal conflict - analogous to an emotional state.

A Pilot's Journey - personal experience

David Hart

Instrument fixation is the sugar hit of aircraft control. Instruments provide high quality information about aircraft state which amplifies a pilots sense of control and it is a great temptation to overly rely on those artificial indications for reference state¹. There are many threats to aircraft safety that a pilot must scan for and the more a pilot focuses on the gauges inside the cockpit the less attention can be spent scanning for external threats ("Pilots are advised to look inside the cockpit no more than 4-5 seconds for every 16 seconds spent scanning the outside world")².

I am a survey pilot and it is my job to fly accurately at low level (~30m). In order to successfully reduce my instrument fixation I set goals which required more of my attention outside of my aircraft and attended more closely to other indications of aircraft state. The result is that I can now fly more accurately with much less attention to flight instruments. An insight from PCT is a requirement of the introduction of bespoke interference tasks (the new controlled variable being the amount of time spend attending to the external environment, measured with an internal subvocal count, before allowing a glance at my instruments) to shape the reorganization required to improve my resilience of control. In this way I was able to improve my perception of aircraft state from input other than instrument indications.

Applications to Flight Training - Outsourcing Consciousness

Setting a competing task was under my conscious direction and required a significant amount of reorganization to achieve. I was able to achieve this because after thousands of hours experience, I can ensure that my aircraft control is not dangerously degraded by conscious interference. That is, I can pay attention to higher level control because lower-level control is already established. Beginners need to pay attention to lower-level control, so additional control is necessary to ensure efficient learning and overall safety. In the past this has been primarily provided by an instructor, but interpersonal issues can arise if the instructor's interference is perceived as overly restrictive. The potential exists to control the display of information to better shape students learning.

Notes

1. https://www.faa.gov/sites/faa.gov/files/2022-11/HFHandbook_Ch12.pdf, p.12-4.
2. https://humansystems.arc.nasa.gov/flightcognition/Publications/Colvin_ISAP05.pdf, p.1.

Body Wisdom: Interoceptive Control from a PCT perspective

Pauline Tieleman

Research on interoception has resulted in interesting puzzle pieces about the connection between body and mind, but an overarching theory that paints the entire picture is still absent. In my master's thesis I used Grounded Theory to construct a theoretical framework based on PCT that converges prior research findings on interoception. This resulted in the Perceptual Control Model of Body Wisdom.

The model is based on the idea that persistent control loss or conflict involves at least three levels of the perceptual control hierarchy. Excerpts from existing literature indicated that persistent control loss can be expressed in five different ways. These ways vary in the extent to which the individual is aware of the three levels involved in one's conflict and the extent to which perceptions from body and mind are integrated. Furthermore, successful reorganization depends on the level of one's conflict attention is directed to.

In my presentation I will explain the five expressions that were derived from existing literature in terms of control and control loss and present my hypotheses on the related control problems. Furthermore, I would like to discuss possible implications for daily practice and further research on interoception.

Applying Perceptual Control Theory principles to improve mental health services: Recent research developments

Robert Griffiths

While many people find the support offered by mental health services helpful, a significant amount of evidence suggests that this is not everyone's experience. These services are often experienced as inaccessible, inflexible, coercive, and as failing to prioritise the perspectives of the people who use them. This presentation will highlight some of the issues that service users describe with current mental health services and consider how principles derived from Perceptual Control Theory (PCT) might be applied to address these. It will be argued that the central function of mental health services is to help people regain control over aspects of their experience that they consider important. Mental health services and interventions should be designed with this goal in mind.

This presentation will conclude by reporting on recent research developments that directly apply the principles of PCT in order to improve mental healthcare. First, findings from the recently completed CAMEO study will be shared. This NIHR-funded cluster randomised controlled trial evaluated the feasibility of training staff working in early intervention in psychosis services in the Method of Levels, an approach to talking therapy that directly applies PCT principles. Second, the design and rationale for an ongoing randomised controlled trial that aims to evaluate the feasibility of using a PCT-informed approach to appointment scheduling to improve access and patient satisfaction in primary care psychology services will be discussed.

Controlling People in Controlling Environments: Balancing Risk Management and Personal Recovery in Secure Forensic Hospitals

Tom Merrill

Secure forensic hospitals purport to fulfil the dual role of managing risk to others and promoting patient's personal recovery. However, these goals can often conflict and can be difficult to reconcile. Risk reduction strategies often focus on changing specific behaviours, such as reducing or eliminating incidents of violence behaviour, and typically emphasises control and restriction to prevent harmful actions. Recovery-oriented approaches, on the other hand, focus more on identifying underlying psychological needs and promoting patient autonomy and personal growth. The goals of risk reduction are often defined (explicitly or implicitly) by mental health professionals working with secure environments, while recovery goals are defined by the patient.

Perceptual Control Theory (PCT) is a psychological framework that explains behaviour as the process of controlling perceptions to maintain desired states or goals. According to PCT, individuals act to reduce the discrepancy between their perceived state and their reference state (the state they want to be in). PCT argues that internal conflict occurs when an individual has two or more goals or reference states that are incompatible or mutually exclusive, making it impossible to achieve both simultaneously. Conflict can create psychological distressed and is associated with a range of 'maladaptive behaviours'.

This presentation will apply the principles of PCT to the experience of patients and mental health professions working in secure forensic hospitals. It will explore the role of control, conflict and reorganisations to understand how patients navigate the dual demands of risk management and personal recovery. By examining the interplay between externally imposed risk reduction strategies and internally motivated recovery goals, the presentation will shed light on the dynamic processes that shape patient behaviour and well-being. It will also discuss how mental health professionals can utilise PCT to better support patients in reconciling these conflicting goals, thereby fostering a more integrated and effective approach to care in secure forensic settings.

An exploratory case series applying the 'Method of Levels' (MOL) to radical, or non-mainstream, views

Jessica Ward, Alicia Brown, Sara Tai, & Warren Mansell


Secure forensic hospitals purport to fulfil the dual role of managing risk to others. This exploratory case series provides foundational knowledge on applying a novel, therapeutic approach – the 'Method of Levels' (MOL) – to radical or non-mainstream views. Despite a lack of consensus on deradicalization approaches in the literature, there is growing agreement and support for the use of empowering dialogue and a non-coercive approach that moves away from confrontational means of dealing with ideologies. In this case series, four people who self-identify as holding radical, or non-mainstream, views, attended a session of MOL and a post-MOL interview. The feasibility and acceptability of MOL was assessed utilising qualitative and quantitative measures, with findings suggesting that participants found this an acceptable intervention due to the nature of the approach. This case series is an early step in the application of MOL to people with self-identified radical or non-mainstream views.

Adaptation and Implementation of Trans-diagnostic Intervention to Optimize Mental Health of Young People Living with HIV (YPLHIV) in Pakistan

Mueen Abid & Zaqia Bano

Background: The prevalence of HIV in Pakistan has risen alarmingly, with young people aged 18-30 being disproportionately affected. In addition to the medical challenges, YPLHIV in Pakistan face significant psychosocial stressors that negatively impact their mental health, including stigma, discrimination, and limited access to comprehensive care. This highlights the need to address the mental health needs of young people living with HIV (YPLHIV), who face unique challenges and vulnerabilities. **PCT as a sole solution:** Perceptual Control Theory (PCT) offers a compelling transdiagnostic framework for understanding and treating mental health problems. By proposing that psychopathology arises from unresolved conflicts between competing control systems, PCT provides a unifying theoretical perspective that can account for the diverse symptoms seen across mental disorders. Importantly, interventions grounded in PCT, such as the Take Control Course, have demonstrated initial effectiveness in addressing a range of mental health issues in a flexible, transdiagnostic manner. This is a significant advantage over traditional disorder-specific protocols, which can be challenging to disseminate and may not adequately address comorbidities. Furthermore, the transdiagnostic and process-focused nature of PCT-based interventions holds promise for improving access to evidence-based psychological treatments, particularly in primary care settings. While most transdiagnostic trials have been conducted in high-income countries, the adaptability of this approach suggests it may also be valuable in low- and middle-income contexts, where resource constraints often limit the availability of specialized mental health services **Objectives & Methodology:** This mixed-methods, three-phase study aims to address this critical issue. The first phase involves the co-adaptation of an existing, effective, trans-diagnostic intervention "Take Control Course (TCC)", for anxiety and depression in YPLHIV, using an evidence-based heuristic model for cultural adaptation. The second phase is a rater-blind randomized control feasibility trial to explore the preliminary clinical efficacy, acceptability, and feasibility of the culturally adapted TCC (CaTCC) compared to treatment as usual (TAU). The third phase is a nested process evaluation to examine fidelity, adherence, and implementation barriers and enablers from multiple stakeholder perspectives. The study also aims to deliver research capacity enhancement activities throughout the project to ensure sustainability. **Outcomes:** The expected outcomes include a culturally adapted TCC intervention for YPLHIV in Pakistan, preliminary evidence on the clinical efficacy of CaTCC, evaluation of its acceptability and feasibility, identification of implementation barriers and enablers, and strengthened research capacity among patients, carers, mental health and healthcare researchers, and policymakers. This study has the potential to significantly impact the well-being and quality of life of YPLHIV in Pakistan by

addressing their mental health needs through a co-adapted, trans-diagnostic intervention. The findings could also inform the development and implementation of similar interventions in other resource-constrained settings with high HIV prevalence and limited access to mental health services.



34th IAPCT Conference · Hybrid program
Friday, November 15th

Workshop: Stepping up and down the hierarchy

Eva de Hullu

In an interactive, outdoor workshop* we will collectively explore Powers' proposed 11 levels of the perceptual hierarchy. Standing on the steps of the amphitheater on the campus grounds, we will explore each level, from that levels' first-person perspective.

For example, if you stand at the floor level, you will, as level 1, control the intensity of sensory information. What is that like for you? What can you sense, and how do you control? What happens when you lose control or gain control? How do you organise?

What is it like to control at level 5, where you perceive and control relationships between lower-level perceptions? How do you arrange and connect control systems at lower levels to perceive space or time?

What is it like to have the higher perspective of a control system at level 10, controlling principles through checking if all the lower level control systems are alright? What can you do to regain control?

Information will be provided to help each level express their way of controlling. If you want to be extra prepared, please read the chapter provided below.

de Hullu, E. (2023). Exploring the perceptual control hierarchy. In *The Interdisciplinary Handbook of Perceptual Control Theory*, Volume II (pp. 3–28). Elsevier. Open access through: <https://research.ou.nl/en/publications/exploring-the-perceptual-control-systems-hierarchy>

*Due to the interactive and outdoor nature of this workshop, it is only available to local participants of the conference.

Trainee Experiences of Discovery Talk

Claire Aldridge

There are not enough psychologists to provide mental health treatments in Australia, and across the world—non-specialists can be trained in low-intensity, brief psychosocial interventions to solve this problem. Our new training program has considered the lessons learned from previous qualitative research on training non-specialists to create Discovery Talk. Discovery Talk is based on Perceptual Control Theory (PCT): In Discovery Talk, the trainer considers the previous experiences and helping styles of its trainees, and then challenges the trainee to consider alternative ways of helping that would be more adherent to the training protocol—this is a relatively unique aspect of Discovery Talk. The training protocol will try to make someone more adherent to Method of Levels (MOL), a transdiagnostic therapy based on PCT. This therapy lets the client decide the problem they want to focus on, while the therapist inquires about the problem, and inquires about any potential higher-order thoughts that may have briefly crossed the client’s mind. This type of therapy may be comparatively easy to learn, due to its transdiagnostic nature, and consideration of previous experiences, which may make it a useful intervention, despite the lack of clinical trials proving its effectiveness.

In this research, we will invite participants to interview before training, immediately after their 3 one-hour Discovery Talk sessions, and at a four-week follow-up. The interviews will be analysed with an Inductive Content Analysis focusing on the research question: What are the experiences of trainees with Discovery Talk, and what are their perceptions about its acceptability and feasibility? The findings from this study will be revealed at the conference once the research has commenced.

Translating PCT & MOL books

Dag Forssell

Dag Forssell, IAPCT/*Living Control Systems* publisher and archivist, will share his process of translating MOL and PCT books in several languages to make this knowledge available to a global audience.

PCT's role in bilateral cooperation, notation, intuition, and pedagogy

John Kirkland, Mike Saywell, Mike Smith

Danny Kahneman's book "Thinking, fast and slow" summarizes much of the research he carried out with Amos Tversky over several decades. Their research-based discovery of dual cognitive processing systems (S1 and S2) is one pillar for the current presentation.

For our second pillar we draw from a proposal advanced in Insup and Martin Taylor's book "The Psychology of Reading". In chapter 11 they describe twin feature-analytical tracks as, ""The bilateral cooperative model of reading"". Of interest is their phrase, bilateral cooperative.

There are clearly parallels between models representing dual processing systems since several other researchers have also noted complementary faculties. We will briefly describe aspects of these two systems which are more like mixed collections of loosely similar processes spread across both hemispheres.

Our third pillar addresses the training of "intuition", that automatic finger-snapping decision-making feature allocated to S1. These inherent heuristics are often distorted by cognitive biases. Bias occurs when reasonable doubt is suppressed by the confidence, cohesiveness, and allure of S1, thus reducing S2's attempts at undertaking due diligence through systematic attention to detail.

We say there is a world of difference between the intuitive irrationality of novices embracing the automatic immediacy of S1's quick returns, and the deliberate heuristics of experts who are aware of intuition's frailty and act accordingly to reduce bias, but nonetheless remain vigilant regarding unexpected error.

We connect these three pillars with the bilateral cooperation of "notation", the bridge for developing understanding and expertise.

We will demonstrate how reported feelings (S1) may be notated reliably into reason-referenced hard-copy text (S2). This guided illustration collapses about seventeen centuries of intermittent discoveries into a few minutes.

In conclusion, we propose that twin-track bilateral cooperation is paved by PCT principles which frame the notation potential of discourses for advancing development of experts' reasonable decision making.

Discovery Talk

Omar Khaliqy

Mental health issues have become a significant concern in contemporary society, with their prevalence steadily increasing over recent decades. Despite heightened awareness and advocacy efforts, many individuals still face challenges in accessing timely and effective professional mental health support. This difficulty is exacerbated by a scarcity of trained mental health professionals and the persistent stigma associated with seeking help. Mental health, encompassing emotional, psychological, and social well-being, profoundly influences how individuals handle stress, relate to others, and make choices.

To address these challenges, innovative approaches involving non-mental health professionals (NMHPs) have gained attention. Discovery Talk, a novel mental health intervention incorporating principles from the Method of Levels and Perceptual Control Theory, aims to equip NMHPs with the skills to deliver effective mental health interventions. NMHPs, including laypersons and non-specialist mental health workers, can deliver psychosocial and psychological interventions effectively, as demonstrated by the World Health Organisation's Mental Health Gap Action Programme. Discovery Talk teaches trainees to use the Method of Levels' client-led approach, which involves guided questioning and reflection to help identify and address individuals in need with their internal conflicts.

Conversely, a critical gap remains in understanding the fidelity of NMHPs' intervention delivery. Fidelity, encompassing adherence to training protocols and competence in delivering interventions, is essential for ensuring the effectiveness of mental health support. Despite the demonstrated efficacy of NMHPs in providing mental health interventions, the literature reveals a lack of comprehensive assessment of training methods and fidelity measures. Additionally, continuous training and rigorous fidelity assessment, as utilised by the Method of Levels therapy, can bridge the mental health care delivery gap.

Therefore, by addressing these gaps and implementing validated fidelity measurement tools, NMHPs can significantly enhance the accessibility and quality of mental health support, contributing to better mental health outcomes in diverse populations. The current study will assess the fidelity of NMHPs using self and expert ratings on the Method of Levels Feedback Instrument. Two ANOVAs will be conducted to evaluate the level of NMHP fidelity over time based on both self and expert-rated fidelity. Additionally, three bivariate correlations will be used to compare self and expert-rated fidelity at each time point (pre- and post-training and follow-up). This study's results and findings will help determine Discovery Talk's efficacy in training NMHPs to be adherent and competent deliverers of mental health interventions over time.

RCT evaluating effectiveness of MYLO, an text-based emulation of Method of Levels, with a student population

Aimee Wrightson-Hester, Greg Tsuklis, Ash Bird, Alex Mullins

Manage Your Life Online (MYLO) is an AI-based conversational agent (or 'chatbot') that has been designed to emulate a Method of Levels (MOL) therapist. Users can freely type about a problem they are experiencing, and MYLO aims to aid participants in solving their problem by responding with questions. These questions adhere to the principles of MOL and aim to increase users' awareness and exploration of problems they are experiencing. Previous case-series and randomized controlled trials have shown MYLO to be acceptable to young people, reducing their problem-related distress and symptoms of anxiety and depression. The current project evaluates MYLO's effectiveness in supporting the wellbeing of university students. Between June and October 2024 we will conduct a two-armed randomised controlled trial (MYLO vs Waitlist) with a sample of 90-110 students. Participants will have access to MYLO for 4 weeks and during that time will complete weekly self-report surveys. The surveys will measure anxiety, depression, quality of life, self-efficacy, and satisfaction with the therapeutic experience. Participants in the intervention group will be asked for consent to share their conversations for further analysis of MYLO's adherence to MOL therapy and user improvements. After the initial 4 weeks, both groups will have access to MYLO and participants from both groups will be contacted at 8 weeks to complete a follow-up survey. We anticipate the results will demonstrate that MYLO is effective at supporting university students' well-being by improving their ability to reorganise conflicts, and thereby, reducing their symptoms of depression and anxiety.

Consciousness, attention, and the motivation-affect system

Tom Cochrane

This paper makes a connection between control approaches to the mind and the global workspace theory of consciousness. The global workspace theory restricts consciousness to mental content that is 'broadcast' to various content-consuming cognitive capacities like reasoning and verbal report. A key question for this theory is then what causes certain content to be broadcast. My answer is that our motivational and affective states call for perceptual and cognitive contents, both present and non-present, to be broadcast. That is, consciousness is the product of a control system for keeping certain mental contents before the mind in the service of our goals. I specifically link this broadcast function to 'alerting attention' which is a subtype of attention involved in maintaining high sensitivity to incoming stimuli. Thus, although a certain kind of attention can occur independently of consciousness, this is merely the selective processing of information, and not the motivated use of information that we find in alerting attention. To illustrate this model, I examine binocular rivalry scenarios. The shifting priorities of our affective and motivational processes, including, but not limited to, the motivation to know what's going on, can help to explain why our consciousness shifts from one image to the other during these scenarios.

Symposium - Emotion from a PCT Perspective

Warren Mansell (convenor)

Bruce Nevin, Eva de Hullu, Andreas Eder, Tom Cochrane

For a theory to provide a well-rounded account of human behaviour, it needs to explain the phenomenology, underlying architecture, biological substrate, and functions of emotions. In this symposium we present a range of control theory accounts. Bruce Nevin outlines Bill Powers' proposed model, which says that emotions originate from reference signals which are copied to the somatic branch of the hierarchy where autonomic control systems prepare the body to carry out the activity called for in the behavioral branch. When control is poor, error outputs call for increased preparations, and resulting sensations in the body are an important component of what we perceive as negative emotion. He will indicate how both neuroscience and subjective experience mandate improvements to the model. Second, Eva de Hullu uses PCT to describe emotions phenomenologically, involving different levels of the perceptual hierarchy. Emotions are considered as lower-level perceptions which derive their meaning from the higher level control of principles. Third, Andreas Eder shares his theory of emotional action, integrating ideas derived from PCT, the Theory of Event Coding, and predictive coding approaches. He introduces the concept of 'conative feelings' as interoceptive readouts of strivings towards desired perceptual states. Fourth, Tom Cochrane, describes a control theory of emotions from a philosophical perspective, according to which emotions are an elaboration of a basic kind of mental representation called 'valent representation'. The distinctive elaboration of emotions is to take in contextual information that lower level affective states do not. We will then discuss and debate the main similarities and differences across the accounts, helping to identify where they may complement one another, and how any discrepancies between them might be resolved.

Applying Method of Levels to the Armed Forces Community - too complex to treat!

Susan McCormack

Background

Mode Rehabilitation provides a drop-in service to the armed forces community, we provide family counselling, school counselling and workshops, and help with both primary and secondary support. These complex individuals have become increasingly important as they rely on our approach to manage the problems, they experience substance misuse, overcome ambivalence over medication use and other medical issues.

Aims

Aims of the current study are to evaluate the effectiveness of Method of Levels (MOL) in addressing psychological distress in clients with complex needs, to assess the therapy's ability to identify and address the underlying causes of distress (regardless of specific disorders or diagnoses) to gain a deeper understanding of the factors contributing to mental health, adjustment difficulties, PTSD and suicide ideation.

Method

Comprised of a case study of 3 clients, who are considered "too complex" by other services. Mixed-methods approach, with emphasis on qualitative methods. Data analysis: thematic analysis and cross-case comparisons, descriptive statistics. Qualitative methods of research gain a deeper understanding of clients' subjective reflexions on their unique, individual experiences, thoughts and feelings. Thematic analysis allows researcher to identify, analyse and report re-emerging patterns within the data pool, allowing categorisation of data across the data pool into common themes.

Results

Possible results may include effectiveness of MOL addressing underlying problems and causes of distress within this cohort, understanding factors contributing to mental health difficulties, improving recovery outcomes, with focus on clients presenting with a diagnosis of post-traumatic stress disorder and suicide ideation.

Clinical recommendations

If proven to be successful, promoting usage of MOL as an effective counselling approach when working with clients with complex needs.

Wind Turbine control

Rupert Young

A comparative evaluation of Perceptual Control Theory and Reinforcement Learning applied to the control of a wind turbine for optimising energy gain. A machine learning approach is applied to generate optimal PCT hierarchies. The resulting PCT system demonstrates higher energy gain outcomes from controlling a wind turbine than that derived from a reinforcement learning approach.