IAPCT

International Association for Perceptual Control Theory

31st Annual Conference

7-9 October 2021

Perceptual Control Theory (PCT) is the science of purpose: how living things use their actions to produce intended results in an unpredictably changing environment. The technical term for this is control. PCT provides a unified and comprehensive theory and research methodology for the many sciences of life, including biology, ethology, neuroscience, psychology, linguistics, anthropology, and sociology, among others.

Each presenter's field poses unique challenges in identifying and testing controlled perceptual variables, and unique opportunities for reconceptualizing observational and experimental methods and data of the field and doing truly pioneering work. Every field presents challenges communicating with those who do not perceive the phenomenon of control, and opportunities for cross-disciplinary research and discovery that becomes possible with the life sciences all working on a common theoretical, mathematical, and methodological foundation. Session topics include neurophysiology, computer modeling, robotics, and applications of PCT in psychotherapy and in education.

Participants usually are from many different time zones extending from Holland across the United States to New Zealand. This year we'll meet at an online conference using Zoom.

Schedule

International Association for Perceptual Control Theory (IAPCT)
31st Conference and Annual Meeting
7-9 0ctober 2021 (Coordinated Universal Time), online.
Timing: same as last year. Early in the Americas, afternoon in Europe and Africa, late in Asia, very early in New Zealand.

Time zones in the calendar:

PDT: Pacific Daylight Time
EDT: Eastern Daylight Time
BST: British Summer Time
CEST: Central European Summer Time
AEST: Australian Eastern Standard Time (*next day compared to PDT!)
NZST: New Zealand Standard Time (*next day compared to PDT!)

Schedule updated 2 October 2021
Google calendar users can easily add the general conference planning (content will follow) to their agenda through this link . The calendar can be viewed in a web browser through this link. However, check if the time is set to the right time zone.

DAY 1: THURSDAY. 7 OCTOBER 2021

Introduction			
8:00 am PDT 11:00 am EDT 4:00 pm BST 5:00 pm CEST Fri 1:00 am AEST Fri 4:00 am NZST	15 minutes	Zoom Host	Zoom Meeting Orientation
		Eva de Hullu: IAPCT President	Welcome

Session 1: Theory, Experimentation & Modelling			
8:15 am PDT 11:15 am EDT 4:15 pm BST 5:15 pm CEST Fri 1:15 am AEST Fri 4:15 am NZST	30 min.	Richard S. Marken	Illusions, Gravitational and Behavioral
8:45 PDT 11:45 am EDT 4:45 pm BST 5:45 pm CEST	30 min.	Rupert Young	Evolving Perceptual Control Hierarchies

Fri 1:45 am AEST Fri 4:45 am NZST			
9:15 am PDT 12:15 pm EDT 5:15 pm BST 6:15 pm CEST Fri 2:15 am AEST Fri 5:15 am NZST	30 min.	Roger Moore	On the Use of the 'Pure Data' Programming Language as a Real-Time Computational Environment for Exploring PCT

15 minute break

Session 2: Toward a PCT Model of Consciousness			
10:00 am PDT 1:00 pm EDT 6:00 pm BST 7:00 pm CEST Fri 3:00 am AEST Fri 6:00 am NZST	30 min.	Eetu Pikkarainen	Some Questions About the Levels of Control Hierarchy and Human Consciousness
10:30 am PDT 1:30 pm EDT 6:30 pm BST 7:30 pm CEST Fri 3:30 am AEST Fri 6:30 am NZST	30 min.	Bruce Nevin	Directions for Bathwater Research: How the Environment Affects Memory and Reference Values
11:00 am PDT 2:00 pm EDT 7:00 pm BST 8:00 pm CEST Fri 4:00 am AEST Fri 7:00 am NZST	30 min.	Warren Mansell	Consciousness and Control: Going Beyond Columbus and Columbo Towards a Collaborative PCT Research Paradigm

30 min general discussion
30 min break

Session 3: Global Perspectives			
12:30 pm PDT 3:30 pm EDT 8:30 pm BST 9:30 pm CEST Fri 5:30 am AEST Fri 8:30 am NZST	30 min.	Kent McClelland	Coronavirus and Control: A Control-Theory View of Pandemic Success and Failure

1:00 pm PDT 4:00 pm EDT 9:00 pm BST 10:00 pm CEST Fri 6:00 am AEST Fri 9:30 am NZST	20 min.	Richard Pfau	Perceptual Control Theory's Congruence with Religion

DAY 2: FRIDAY, 8 OCTOBER

Introduction: Day 2			
8:00 am PDT 11:00 am EDT 4:00 pm BST 5:00 pm CEST Sat 1:00 am AEST Sat 4:00 am NZST	10 minutes	Eva de Hullu and Zoom Host	Welcome, and Zoom Meeting Orientation

Session 4: Processes of Distress and Recovery			
8:10 am PDT 11:10 am EDT 4:10 pm BST 5:10 pm CEST Sat 1:10 am AEST Sat 4:10 am NZST	20 min.	Melleia Pitt	What are the Relationships Between Glycaemic Control, Psychological Distress, and Goal Attainment in Type 1 Diabetes? Assessing the Acceptability and Feasibility of a Case Series Informed by PCT
8:30 am PDT 11:30 am EDT 4:30 pm BST 5:30 pm CEST Sat 1:30 am AEST Sat 4:30 am NZST	20 min.	Georgia Palmer	How Does the Way We Deal With Our Thoughts and Feelings Affect Our Reaction to Bereavement? How Perceptual Control Theory Can Further Our Understanding of Mourning
8:50 am PDT 11:50 am EDT 4:50 pm BST 5:50 pm CEST Sat 1:50 am AEST Sat 4:50 am NZST	45 min	Eva de Hullu and Ger Schurink	Focus on Sensations: How to Sustain Awareness at the Lower Levels

15 minute break

Session 5: Method of Levels			
9:50 am PDT 12:50 pm EDT 5:50 pm BST 6:50 pm CEST Sat 2:50 am AEST Sat 5:50 am NZST	20 min.	Matias Salgado	Method of Levels (MOL) in Argentina. A Shift is Happening
10:10 am PDT 1:10 pm EDT 6:10 pm BST 7:10 pm CEST Sat 3:10 am AEST Sat 6:10 am NZST	20 min.	Ellen Jongejan	First steps in a Method of Level Accreditation process

30 min general discussion
30 min break

Session 6: Applied PCT			
11:30 am PDT 2:30 pm EDT 7:30 pm BST 8:30 pm CEST Sat 4:30 am AEST Sat 7:30 am NZST	20 min.	Shelley Roy	Creating Connected Schools
11:50 am PDT 2:50 pm EDT 7:50 pm BST 8:50 pm CEST Sat 4:50 am AEST Sat 7:50 am NZST	45 min.	John Kirkland	Embedding PCT within Online Marketing

DAY 3: SATURDAY, 9 OCTOBER

Introduction: Day 3

8:00 am PDT 11:00 am EDT 4:00 pm BST 5:00 pm CEST Sun 1:00 am AEST Sun 4:00 am NZST	10 minutes	Eva de Hullu	Welcome and Meeting Orientation

Session 7: Neurophysiology			
8:10 am PDT 11:10 am EDT 4:10 pm BST 5:10 pm CEST Sun 1:10 am AEST Sun 4:10 am NZST	30 min.	Erling Jorgensen	Open-Loop Methods for Closed-Loop Components

5 minute break

Open Forums on Applications of PCT			
8:45 am PDT 11:45 am EDT 4:45 pm BST 5:45 pm CEST Sun 1:45 am AEST Sun 4:45 am NZST	30 min.	Facilitator: Lloyd Klinedinst	Use of PCT in Our Daily Lives
9:15 am PDT 12:15 pm EDT 5:15 pm BST 6:15 pm CEST Sun 2:15 am AEST Sun 5:15 am NZST	50 min	Facilitators: Bart Madden and Dag Forsell	Business and Management
15 minute break			
10:20 am PDT 1:20 pm EDT 6:20 pm BST 7:20 pm CEST	30 min.	Facilitator: Kuba Grzegrzolka	Mental Health

Sun 3:20 am AEST Sun 6:20 am NZST			
10:50 am PDT 1:50 pm EDT 6:50 pm BST 7:50 pm CEST Sun 3:50 am AEST Sun 6:50 am NZST	30 min.	Facilitators: Shelley Roy and Jane Williams	Schooling and Children
11:20 am PDT 2:20 pm EDT 7:20 pm BST Sun 4:20 am AEST Sun 7:20 am NZST	30 min.	Facilitator: Bruce Nevin	Future Directions of Research

40 min break

Annual IAPCT Meeting			
12:30 pm PDT 3:30 pm EDT 8:30 pm BST 9:30 pm CEST Sun 5:30 am AEST Sun 8:30 am NZST	1 hour	Eva de Hullu IAPCT President	Elections and Other Matters

Abstracts

Session 1: Theory, Experimentation & Modelling

Richard Marken: Illusions, Gravitational and Behavioral

Presenter: Richard S. Marken, PhD
Time Requested:
Discipline/Professional Area:

The illusion of gravity as a force — the *gravitational illusion* — is remarkably similar to the illusion of behavior as an output — the *behavioral illusion*. Einstein's theory of relativity shows that the gravitational illusion is a consequence of our failure to see that motion occurs in a 4- rather than a 3-dimensional universe; gravity is motion through curved *spacetime*. Powers' theory of perceptual control shows that the behavioral illusion is a consequence of the failure to see that organisms produce consistent results in a disturbance-prone world; behavior is variations in the states of *controlled perceptual variables*. This talk will discuss possible reasons why physicists rather quickly understood and accepted Einstein's revolutionary theory of relativity, which tossed the accepted concept of gravity out the window, and why psychologists still haven't understood or accepted Powers' equally revolutionary theory of perceptual control, which tossed the accepted concept of behavior out the window.

Rupert Young: Evolving Perceptual Control Hierarchies

Presenter: Rupert Young
Time Requested:
Discipline/Professional Area: PCT Robotics

Creating control systems, manually, for robots is a long-winded and laborious task. For anything but fairly simple systems it is impractical. Ideally, the systems would learn for themselves. In this talk I will discuss machine learning approaches tailored to self-organising Perceptual Control Hierarchies. I will present some demonstrations of preliminary work on the creation of control hierarchies by evolutionary algorithms, in simulated environments. In principle, this approach could be applied to control problems of any complexity.

Roger Moore: On the Use of the 'Pure Data' Programming Language as a Real-Time Computational Environment for Exploring PCT

Presenter: Roger Moore
Time Requested: 30 min
Discipline/Professional Area: Computer Science

The PCT community has employed a range of practical solutions for implementing different control structures, from Excel spreadsheets to Python. This presentation will introduce the 'Pure Data' (Pd) open-source real-time visual programming language, and will illustrate the ease with which it is possible to use it to create real-time simulations. The presentation will include 'live' examples of its use in exploring PCT-based solutions to a variety of different problems (several of which involve audio signals).

Session 2: Toward a PCT Model of Consciousness

Eetu Pikkarainen: Some questions about the levels of control hierarchy and human consciousness

Author(s): Eetu Pikkarainen

Bill Powers developed, using phenomenological introspection, a theory of about ten to twelve separate and qualitatively distinct levels of controllable perceptions from the lowest intensity perceptions to highest system concept perceptions. In this theory every higher level perception is supposed to be a combination, a weighted sum, or a vector sum of a set of next lower level perceptions. There is not much empirical evidence for this theory — Plooij as an important exception. As based on an introspective speculation this theory can be compared to other philosophical category theories from Aristotle via Kant to Peirce and many others. Unlike most of these others Powers' theory is strictly connected to an empirically sound theory of hierarchical perceptual control (HPCT). However, HPCT does not require any qualitatively distinct levels and it does not even give much support for them. If we think about the hierarchical structure of control units in any organism, it is difficult to see how the levels or the borderlines of levels should reside there, especially because it is well possible that any level can contain a variable amount of sublevels or intra-level layers. Secondly, according to HPCT control always takes place via structurally and qualitatively similar control units, and perceptions (perceptual signals) are always qualitatively similar neural currents varying only quantitatively.

However, according to experience and some empirical evidence there after all seems to exist these kinds of perceptual levels. But if their existence is not based on the neuronal structure of the control hierarchy then what is their basis? One natural answer is - against radical constructivism - that they are based on the structures of the perceived reality. At least ontology could explain the lowest levels. The highest levels could be respectively based on the traditional habits of action in societies. Another — and not necessarily exclusively alternative to the previous — is consciousness. According to Martin Taylor consciousness can be thought to be a separate and somehow parallel system in the side of the basic perceptual control system. The consciousness system is connected to the control system via a category interface which creates categorical perceptions from the quantitative perceptions in the different tiers of the control system. The levels of the Powers' theory may themselves be conscious categories as such rather than real and objective neuronal structures.

Bruce Nevin: Directions for bathwater research: How the environment affects memory and reference values

Presenter: Bruce Nevin
Time Requested: 30 minutes
Discipline/Professional Area: PCT linguistics

I will discuss several kinds of phenomena which have not yet been studied and comprehended in PCT: distinct branches of the hierarchy; attention, awareness, subliminal perception and control, and consciousness; ‘unboxing’ memory as the origin of reference signals and imagined perceptions, and understanding how these are subject to environmental influence. Several fields have investigated these topics, generating a huge ‘bathtub’ of publications. The baby in the bathwater is not data of

individual behavior (purportedly caused by stimuli or extracted from 'big data' by 'information processing'), but rather environmental effects on memory and reorganization.

The *locus classicus* publication, *Behavior: The Control of Perception* (B:CP) postulates that a reference signal is produced by evoking a perception that is stored in memory. The source of the remembered perception is represented by a box in the canonical diagram of a control loop, a convention which has led occasionally to confused 'stories' about how this works, even though Powers et al. (1960) is clear that this box is a notational convenience for memory distributed over locations that the box does not specify. There are three forms of memory. Memory is stored at each synapse in two forms. Neurochemical depletion limits short-term memory to 15-30 seconds, changes to molecular gates on a synapse endure longer. The structure of input functions and output functions, the interconnections between comparators, and the place of a given comparator within that structure, constitute a third kind of long-term memory.

Changes in the structure of branches and synapses (reorganization) are reported to be the normal behavior of neurons unless it is inhibited by changes in the neurochemical environments of synapses. PCT proposes that the ultimate determiner of reference values in a living control system is reorganization, spurred by error in the control of intrinsic variables—in other words, environmental influences on intrinsic variables establish values in memory which are the basis of reference values as well as of memories and other imagined perceptions. How does this happen? Chapter 17 of B:CP (2005) proposed that preconscious, fast-acting, largely inherited functions in the limbic system interact with functions in the somatic branch of the hierarchy and its intra-corporeal environment, and that these together intercommunicate with cortical functions, including those which create the perceptions that we call emotions. The limbic system, alert to survival threats and opportunities, is the arbiter of reorganization and a major pathway for environmental conditions to influence reference values.

When we ask what affects intrinsic error and influences reference values, we find a huge literature. The authors assumed that stimuli cause behavior, but they describe ways of influencing control functions including memory, reference levels, gain, reorganization, problem-solving, and selection of the most efficacious lower-level means of control. What I propose is that we should cease complaining that we can't find data about behavior in the conventional scientific and clinical literature, and mine these descriptions for data about environmental influences on memory by means of disturbances to controlled perceptual variables, some of which may be difficult to bring to awareness. We will have to resolve vagueness and doubts by independent observation. This could enable better understanding of how some memories and not others are transformed to reference values for control, and how environmental influences may change these memory associations.

There is also a large literature concerning subliminal motivations (below the limen or threshold of awareness) and 'the subconscious'. Reference values and even controlled perceptions may be subliminal, manifesting as inexplicable behavior. Subliminal preparation of the somatic hierarchy can intrude on attention, resulting sometimes in 'intuitive' avoidance of danger, or in regrets at not having 'paid attention' to a 'hunch' or 'gut feeling'. The literature of hypnotic phenomena, public relations, advertising, propaganda, and the manufacture of loyalties and consumer demand may direct our research to phenomena further demonstrating environmental influence on reference values.

Warren Mansell: Consciousness and Control: Going Beyond Columbus and Columbo towards a collaborative PCT Research Paradigm

Presenter: Warren Mansell
Time Requested:
Discipline/Professional Area:

Perceptual control theory provides the fundamental principles of control, conflict and reorganisation to explain the behaviour of living organisms. Following from this, a unique role of PCT

is to identify the controlled variables involved in a variety of activities and skills. Using these, PCT has the capacity to critique competing theories, rewrite accepted research methods, and innovate diverse applications.

PCT also describes the neural and psychological architecture that utilises these principles within humans specifically. This enterprise is considerably more detailed, and entails the description of specific perceptual levels, memory storage, modes, manipulation of mathematical and linguistic symbols (codes), neuroanatomic components, and more, all consistent with the fundamental principles of PCT, producing arguably a wholly more elegant architecture than competing theories. Yet, much of this second endeavour of PCT overlaps with the main body of research in the life and social sciences, and indeed Powers drew upon existing work at the time for his synthesis. Right now, although not benefited by PCT's core principles, other theoretical frameworks with greater academic recognition are making headway synthesising the available data. Despite being the optimum place, conceptually, for an integrative approach, PCT is being left behind within academic circles.

So what should be our approach? We have had two strategies: Columbus or Colombo.

The Columbus approach involves charting new waters and claiming a new field of academic enquiry, relatively separate from the academic homelands. This is PCT's typical research strategy. In last year's talk, I put forward a research plan for testing PCT models of psychological change in therapy in this spirit.

The Colombo approach is like the Method of Levels therapist: humble, curious and open-minded, yet also wise and tenacious. The Colombo PCT expert helps other academics question their own assumptions, but only when they are ready for it, at their own pace, which is very variable, and often slow or non-existent.

We now need a different approach.

What can we learn from the rest of science? The competing approaches in neuroscience are finally shifting to dismantle the assumptions of earlier stimulus-response and information-processing approaches, and they even refer to earlier control theory work, but they are nonetheless stuck within a view of the brain as a probabilistic prediction engine that extracts statistical correlations across masses of passively accumulated data. PCT has the capacity to go well beyond this labour-intensive and non-naturalistic form of prediction. But to do so wholeheartedly may require a new research direction: to collaborate with this new wave of scientists on testing a new hypothesis.

The hypothesis I would like to put forward for discussion, drawing upon earlier and current PCT work, is about consciousness — a topic that still fascinates and challenges scientists.

I would like to propose that consciousness is the continuous creation through reorganisation of new input functions that combine and transform existing perceptual inputs. Secondarily, the human brain, body & society draw upon dissociable modes of control and codes within hierarchical control systems to craft & utilise elaborate feedback pathways (technology) that maximise the capabilities of consciousness.

This research progress will require extensive interdisciplinary collaboration, as well as novel research designs and a fit-for-purpose public relations system. I plan to describe the basics of such a program for discussion.

Session 3: Global Perspectives

Kent McClelland: Coronavirus and Control: A Control-Theory View of Pandemic Success and Failure

Author: Kent McClelland
Time requested: 30 minutes
Discipline or professional area: Social Sciences (Sociology/Political Science)

For the last 18 months, government leaders around the world have faced the urgent problem of protecting their people from the coronavirus pandemic. As COVID-19 has spread exponentially through one country after another, leaders have tried desperately—sometimes successfully, sometimes not—to curtail the spread of the disease and minimize the death and debility it brings, while also avoiding economic disruptions. Journalists and academics have already produced a huge literature evaluating the policies used to combat the coronavirus pandemic, but although the problem is essentially one of control, rarely has anyone drawn upon control-systems theory to understand why some policies have worked, and others haven't.

This presentation explains how feedback loops are central to any control process and describes how some government leaders have used the following feedback loop to gain control of the pandemic in their countries: (1) identify the threat, (2) chart the spread of the disease, (3) clarify their policy objectives, (4) devise policies likely to contain the disease, (5) get cooperation from others to carry out these policies, (6) locate or produce useful tools for fighting the disease, (7) carefully monitor the results of their efforts vis-à-vis policy objectives, (8) adjust policies as necessary, (9) respond promptly to unexpected contingencies, (10) persist with all of these measures until the threat is removed. By contrast, leaders who have neglected any part of this feedback loop have failed. To control a pandemic is no doubt a formidably complex task, but control-systems theory can help us put this enormous challenge in perspective.

Richard H. Pfau: Perceptual Control Theory's Congruence with Religion

Presenter: Richard H. Pfau
Time Requested: 20 Minutes
Discipline/Professional Area: Application of PCT

The world's religions have many similarities in their teachings and benefits to humanity. Similarities include an emphasis on core values such as the golden rule (do unto others…), loving-kindness, and honesty as well as accountability for one's actions. Benefits include provision of a moral compass for behavior, improved physical and mental health for many, and a sense of community and harmony among people that provide the basis for society to exist. This paper shows how perceptual control theory can be used to explain (a) why many of those values and related teachings are so wise given how our nervous systems function, (b) the neural basis for religious concepts and practices such as sin, prayer and other rituals, (c) why and how a number of benefits occur from religious practice, and (d) how our nervous systems function to produce both religious and non-religious behavior.

Session 4: Processes of Distress and Recovery

Melleia Pitt: What are the relationships between glycaemic control, psychological distress, and goal attainment in Type 1 Diabetes? Assessing the acceptability and feasibility of a case series informed by PCT.

Presenter: Melleia Pitt (BSc Psychology Graduate – June 2021), supervised by Dr Warren Mansell (University of Manchester)
Time Requested:
Discipline/Professional Area:

This presentation will discuss how Perceptual Control Theory (PCT) may be used to explain glycaemic variability and distress associated with Type 1 diabetes (T1D). Managing the daily demands of T1D can be challenging and, as a result, the prevalence of poor glycaemic control and psychological distress in this group is high. Despite this, practical recommendations for psychological support in T1D care are scarce and the mechanisms underlying glycaemic variability and distress remain poorly understood. Control has been proposed as this mechanism, but previous studies have yielded mixed findings.

We conducted a study which addressed this by proposing that PCT may provide a more comprehensive framework for investigating control and T1D outcomes. PCT posits that the pursuit of personal goals can be described as control and that psychological and behavioural dysfunction are the manifestation of lost control. The study aimed to assess the acceptability and feasibility of a novel approach to investigating this issue. A case series design was adopted to investigate the daily relationships between control (informed by PCT), distress, and glycaemic variability in adults with T1D. 10 participants with T1D identified important personal goals, recorded their attainment of these goals alongside their distress and blood glucose levels for 14 days. Results suggest that the design is feasible and acceptable amongst adults with T1D. Material from two cases will be discussed during the presentation, alongside how PCT-informed computational models may be used to simulate individual data in future, larger-scale studies. Implications of our findings will be discussed, including the potential for future studies to inform more efficacious, patient-centred T1D care strategies.

Georgia Palmer: How does the way we deal with our thoughts and feelings affect our reaction to bereavement? How Perceptual Control Theory can further our understanding of mourning.

Authors: Georgia Palmer (BSc Psychology Graduate – June 2021) and Dr. Warren Mansell
Time requested: 20 minutes
Professional area: Psychology research into mourning

We will outline how Perceptual Control Theory (PCT) can add to current theories and research into mourning following a bereavement, and present a study which we have recently conducted that supports this.

Research has already identified various styles of processing, such as rumination, worry and intolerance of uncertainty, which have been linked to severe and persistent grief. However, research fails to fully account for why these processing styles are employed or how they influence mourning.

From a PCT perspective, mourners may employ these processing styles rigidly because they are taking a narrow perspective of their loss and the implications of it, that is, they may be unaware of how trying to obtain one goal associated with their mourning may conflict with another, and so, they will struggle to overcome their grief. Therefore, an individual will be unaware of how or why these processing styles are causing conflict within themselves and hindering their ability to overcome their mourning.

We conducted a regressional analysis of 180 bereaved individuals who were measured on their tendency to take a wide and open or narrow and rigid approach to their problems, using a scale designed to directly measure some of the central aspects of PCT. We found that a tendency to take a wide perspective of a problem could predict the level of grief, after controlling for loss and demographic characteristics and intolerance of uncertainty.

Therefore, our study provides initial evidence for the utility of exploring grief from the PCT perspective. Implications of these findings, with regards to treating and understanding severe grief as well as other loss-related life experiences, will be discussed. Future research directions will also be discussed, addressing the methodological limitations of a regressional study, as compared to other experimental designs and, perhaps, computational modelling.

Eva de Hullu & Ger Schurink: Focus on sensations: how to sustain awareness at the lower levels

Presenters: Eva de Hullu & Ger Schurink
Time Requested:
Discipline/Professional Area:

A core goal of Method of Levels (MOL) Therapy is to bring the client's awareness level-up, in order to resolve conflicts. In practice however, we experience that there are many cases in which level-up awareness doesn't sustainably reorganize the system in cases when the lower levels in the hierarchy are actively excluded from awareness because some feelings are too threatening.

We would like to demonstrate and discuss ways in which, naturally adhering to the MOL goals of asking curious questions and noticing disruptions, sustained attention can be held at lower levels in the hierarchy: exploring painful sensations, emotions, feelings. Through a sustained focus on sensations and expressing lower-level perceptions that come to mind, clients will be able to explore areas in their experience that are normally blocked out of awareness. Keeping awareness at a painful perception and expressing what comes to mind while not actively doing anything to change the perception allows for reorganization at these lower levels.

Session 5: Method of Levels

Matias Salgado: Method of Levels (MOL) in Argentina. A shift is happening.

Presenter: Matias Salgado BSc (Hons)
Contact: salgado_matias@hotmail.com and matias.salgado@remindweb.com
Time Requested:
Discipline/Professional Area: Clinical Psychologist, Specialist in Cognitive Therapy
Tornu Hospital, Buenos Aires City, Argentina. Clinical Director at re:mind (www.remindweb.com)

Argentina is known to be one of the countries with the highest number of psychologists per capita, and most of its people find therapy as a necessary and useful means for self-discovery, self-understanding and growth, whether or not they have a disorder to treat. Psychoanalysis has always been the mainstream therapy, followed by the Integrative Approach and CBT in recent years. Nevertheless, nowadays there is a shift in what clients and therapists are looking for, a more flexible approach the client could feel familiar with, in control, that can be at the same time effective, efficient and evidence-based. In Argentina, in May 2021 we launched a Method of Levels (MOL) Center and found that (for 1.5 months) a first cohort of patients (46) and companies (3) responded very well to MOL, with high demand (169 slots), high rated feedback, and low absence (2.3%) and low dropout rates (4.3%). MOL in Argentina is still in an early stage, but already shows a great present and a promising future in terms of acceptance, dissemination, and expansion. MOL came to Argentina at the right time to fill the gap between what therapies were offering and what clients really needed, which is just to take back control of their lives.

Ellen Jongejan: First steps in a Method of Level Accreditation process

Presenter: Ellen Jongejan, Student Open Universiteit, master klinische psychologie

This presentation will be an introduction of research that supports the desire of several MoL practitioners for Method of Levels accreditation. We want to develop a process and a set of criteria for MoL practitioners to use for MoL accreditation. The purpose of present research is to describe how the quality of a MoL session can be measured and how this measurement can be incorporated within an accreditation process for MoL.
As part of the presentation, I will present an upcoming request to participate in this research.

Session 6: Applied PCT

Shelley Roy: Creating Connected Schools

Presenter: Shelley Roy
Time Requested:
Discipline/Professional Area: Author and Leading Figure in Perceptual Control Theory, has worked in the fields of justice, education, business and non-profit agencies, and presently serves as a Middle School Counselor in a private school in Miami Florida, USA.

This presentation focuses on over 25 years of moving schools away from a stimulus-response perspective on leading, teaching and learning to ones based on the principles of Perceptual Control Theory. Creating schools that are achieving, caring and safe.

The phrase “You can’t make them.” captures the essence of change and learning. For years researchers have sought the silver bullet of how to “cause” or “make” an individual and/or a system change, grow and learn. The entire educational system is premised on making someone else do something they may not want to do. What Sir Ken Robinson calls “a machine age activity.” The school board is charged with making the administrator create the type of school they want. The administrator’s role is to make the teachers teach what and how they want. The teachers are supposed to make the students learn what and how they want. And everyone’s success is measured by the results that someone else produces. So if PCT teaches us that you can’t make a living system do something it doesn’t want or wasn’t designed to do — unless you are willing to go to means of extreme coercion — how do you change education? My answer: you teach them PCT and get out of their way.

John Kirkland: Embedding PCT within online marketing

Presenter: John Kirkland
Authors: John Kirkland, Mike Smith, Mike Saywell
Time Requested:
Discipline/Professional Area:

This presentation is our third of an IAPCT series. It describes our team’s design for a PCT-inspired marketing plan aimed at promoting an online how-to-learn course, Six Learning Levers, suitable for senior high school and tertiary students.

We open by outlining two traditional output-focused marketing metaphors, funnel and flywheel. Then we introduce an early (almost PCT) approach to marketing and conclude this section by summarizing an author’s view of a PCT-appropriated online-marketing integration.

In general marketing is push-oriented, persuading and urging prospective buyers to act, often by including an emotional overtone. We flipped this view from output to input control. In doing so we offer a series of choices aimed at easing doubts and inviting further participation at different levels of engagement. Resolving doubts through active decision-making contributes value to a personal shopping journey.

By bundling PCT with contemporary online User Experience (UX) marketing approaches, there is a theoretical home for online marketeers. Of interest, marketeers have arrived at parallel practices through trial-and-error and many now apply PCT principles implicitly.

We conclude this presentation by sharing our internet wiring diagrams as well as providing conference participants with opportunities to take a test drive around our online marketing interface.

Erling Jorgensen – Open-Loop Methods for Closed-Loop Components

PCT confronts a neurophysiological dilemma: PCT control loops are usually distributed circuits encompassing peripheral nerves, several areas of the brain, physics of the outside environment, whereas neurophysiology is studied on a micro scale, with just a small segment of the loop. The parts versus the whole operate on different time scales, which presents a window of opportunity: Stay within the transport lag, because you don't want properties to change while you're in the midst of a measurement.

Open-loop reverse engineering within those constraints can help create credible models of closed-loop components such as Perceptual Input Functions. This is illustrated via the Weighted Intersection Mechanism (WIM) of Perrone & Thiele (2002). They essentially create a motion sensor out of the ratio of two types of neurons in the primary visual cortex, which projects to the middle temporal cortex (with some biologically plausible transformations) to construct a perception of "speed." Their model shows an excellent fit to multiple published data sets of the output of middle temporal neurons. It also supports a key heuristic insight of Hierarchical PCT, that combining the outputs of lower level perceptions can result in qualitatively different perceptions at a higher level.

Open Forums on Applications of PCT

Organized by Richard Pfau and Lloyd Klinedinst
Each session will focus on the application of PCT to one or more areas such as business, management, health, and schooling. Experienced presenters will spend 5 to 7 minutes sharing their experiences and thoughts about the area they are focusing upon. Open discussion will then follow.

Use of PCT in Our Daily Lives

Facilitator: Lloyd Klinedinst

Business and Management

Facilitator: Bart Madden and Dag Forsell

Mental Health

Facilitator: Kuba Grzegrzolka

Schooling and Children

Facilitators: Shelley Roy and Jane Williams

Future Directions of Research

Facilitator: Bruce Nevin

Beyond motor control

Proposal for discussion forum. For context, a quotation:
"For the first 10 to 15 years, most of my research was aimed at demonstrating principles of control that were inconsistent with the current open loop causal model of behaviour. I used very simple tracking tasks because in these tasks the variables are very easy to see and keep track of. Unfortunately, using these simple tasks led people to believe that control theory was only relevant to the 'Motor behaviour' seen in these tasks."
From an interview with Rick Marken

Within the PCT community there has been a perception that research that is not quantitative and amenable to quantitative modeling is not quite respectable. This is unfortunate for several reasons, for example:

- Control at higher levels is difficult to quantify.
- Much of control at higher levels depends upon or is interactive with language, which we cannot yet represent adequately in a control model.
- A quantitative model by definition represents neural signals. Can reports of perceptions as experience be equally well specified and replicable?
- Different sensory modalities operate in parallel.
- Distinct branches of the control hierarchy operate in parallel, e.g. Powers described interaction of the behavioral and somatic branches in his account of emotion.
- Frans Plooij (and I) have adduced evidence of a role of the expanded cerebellum in perception and control of concepts as abstract objects, perhaps also accounting for creation and control of perceptions that we experience as categories.
- The place and functioning of the 'reorganization system' is far from settled.

What other kinds of research are valid PCT research? How do we encourage and support such research, without inviting confusion with (or substitution of) modes of 'explanation' that are not grounded in control theory?