

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

Hotel Bergresort

Seefeld, Austria

June 17, Monday – June 22, Saturday 2019

Home

Registration

Potential
Attendees

Travel

Lodging

Meals

Activities

ASIC Format

Sessions

Talk

Submissions

ASIC Websites

Contact

.....



-- Send in your
registration
and
abstract
submission form.

.....



Austrian Alps near Seefeld, at Wildsee

The Eighteenth Annual Summer Interdisciplinary Conference (ASIC 2019) will be held at Hotel Bergresort in Seefeld, Austria, with talks every afternoon and evening on the six consecutive days June 17, Monday – June 22, Saturday, 2019 (the last talks will be held in the evening of June 22, so the departure date should be June 23 or later). The dates are chosen to reduce possible conflicts with the Cognitive Science Society meetings to be held July 24 – 27 in Montreal, and the Mathematical Psychology Meetings likely to be coordinated with that meeting.

If you have a 5% or higher chance of attending, go to the link on this website 'Potential Attendees' and list yourself, your probability, and your email.

Hotel Bergresort (see <https://www.bergresort.at/en/>) is highly rated, award winning, and has spa facilities and a superb restaurant. The meetings, catered breaks, and breakfasts and dinners will be held in the hotel. For reservations, descriptions and details, visit the links on this website "LODGING" and "MEALS".



Hotel Bergresort

Seefeld is 20 km northwest of Innsbruck Airport, about 30 minutes by car. It lies on a plateau at 1200 m elevation. It is in the midst of mountains, and adjacent to a mountain rising to 2300 m.



Seefeld Austria

Travel to the resort is quite easy from the closest international airport at Innsbruck--about 30 minutes by car or an hour or more by train depending on connection times. Travel options are found on this website on the link 'TRAVEL'.

There are a huge number of outdoor activities in or near Seefeld, including hiking, mountain and road biking, rock climbing, mountaineering, via ferrata, parasailing, canyoning, touring, golf, tennis, and adventure parks. For a more complete description visit the link on this website "ACTIVITIES".

Richard M. Shiffrin of Indiana University - Bloomington is the organizer: Email correspondence should be directed to University

(for all contact info, select **Contact'** from this website menu).



ASIC Organizer, Rich Shiffrin, atop Torre Grande, near Cortina. Italy

The subject matter of the ASIC conferences is interdisciplinary, but with a primary emphasis upon a wide variety of scientific domains within the broad frame of Cognitive Science. ASIC uses the very successful format of previous ASIC and AIC conferences: Days are free for leisure activities and discussions among participants. The talks are in the later afternoon/early evening, followed by dinner. The date has been chosen to make it convenient for attendees to bring family/friends.

Previous Years' Websites

See the link on this year's website titled "**ASIC WEBSITES**"

Invitation

The conference is open to all interested parties, and their family and friends. An invitation is NOT needed to attend. It will be of particular interest to scholars who fit the very general theme of the conference. We encourage you to send the conference information and invitation to friends and colleagues.

Due to the small number of spots for speakers, in the event that too many attendees desire to speak, the organizer will adapt the lengths of talks and/or select whom will give talks.

Conference Aims

The conference is truly interdisciplinary and will welcome interesting talks aimed at a general audience on any subject, but most talks have ranged across a variety of subjects in cognitive science, including:

- modeling of cognition
- neuroscience, cognitive neuroscience
- psychology (including perception, psychophysics, attention, information processing, memory and cognition)
- computer science and artificial intelligence
- machine intelligence and learning
- methodology and statistics
- linguistics, psycholinguistics and computational linguistics
- philosophy of mind, cognitive science

We especially invite talks emphasizing theory, mathematical modeling, and computational modeling (including neural networks and artificial intelligence). Nonetheless, we require talks that are comprehensible and interesting to a wide scientific audience. Speakers will provide overviews of current research areas, as well as of their own recent progress.

Conference Format

There is a single speaking session each day (no posters), intentionally organized to maximize the dissimilarity of each day's presentations. If the number of participants exceeds the number of speaking slots (either 42 or 48), then the organizer will select some talks to be of shorter duration, and if necessary choose the speakers who will have the opportunity to present their work. Information on submitting proposals for presentation is on the page of this website labeled "Talk Submissions". Please submit talk information on the website. Your information, such as authors, title, abstract and so on can be deleted, replaced, or altered at any time up to June 1.

The conference will start with registration and a reception with wine, beer, drinks and food from about 15:30 - 16:15 on Monday, June 17. On subsequent days there will be drinks and light snacks from ~ 15:45 - 16:15, followed by a session of about seven or eight spoken presentations that may include a mid-session drink break. The last evening of talks will be Saturday, June 22, so plan to depart no earlier than Sunday, June 23.

It will not escape the careful reader that this conference format frees most of the day for either discussions with colleagues or various other activities with colleagues, family, and friends. We hope and expect all scientific attendees and participants to attend all sessions. The time frame will allow day trips to nearby sites, but arrange to return in time for the sessions. Travel to sites and planned activities from which a return for the session

will not be possible by 16:00 should be arranged for days preceding or following the conference.

Registration

You are not officially on the list for presenting research until you register and send the registration fee. Visit the [Registration page](#) at this website.

Lodging

A block of rooms are presently being held, but are limited (at the price negotiated), and unreserved rooms will gradually be returned to the general public, so reserve soon. For information visit the [Lodging page](#) at this website.

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary Conference

Home

Registration

Potential Attendees

Travel

Lodging

Meals

Activities

ASIC Format

Sessions

Talk

Submissions

ASIC Websites

Contact

.....



-- Send in your
registration
and
abstract
submission form.

.....

Registration Information for ASIC 2019

If you have a 5% or greater chance of attending ASIC 2019, please list yourself on the website at the link 'Potential Attendees'. If you reach the point where you are reasonably sure of attending, please fill out the **registration form** and submit your registration fee. This fee pays for rental of the conference room, conference equipment rentals, catering costs for snacks and drinks at conference breaks and receptions, and several other miscellaneous costs.

Registration fee schedule, in US dollars:

	To Indiana Conference Bureau
Prior to January 1, 2019	\$300
January 1, 2019 - March 1, 2019	\$350
After March 1, 2019	\$400

In addition to the registration fee per person, you may purchase additional guest vouchers for other persons attending the receptions, breaks, and dinners. The fee for guest attendance at breaks only is \$15 per day. The fee for each person not at the hotel who wishes to join the buffet dinner there is 45 euro (55 Saturday), paid directly to the hotel.

Registration and payments are made via the Indiana University Conference Bureau as indicated on the registration form.

If a registration payment is made, but the attendee cancels prior to May 17, 2019 the registration fee will be refunded minus a \$20 handling fee. After May 17 and prior to the conference, a refund will still be made, but the handling fee will rise to \$50.



ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

Home
Registration
Potential
Attendees
Travel
Lodging
Meals
Activities
ASIC Format
Sessions
Talk
Submissions
ASIC Websites
Contact

Travel to Hotel Bergresort, Seefeld Austria



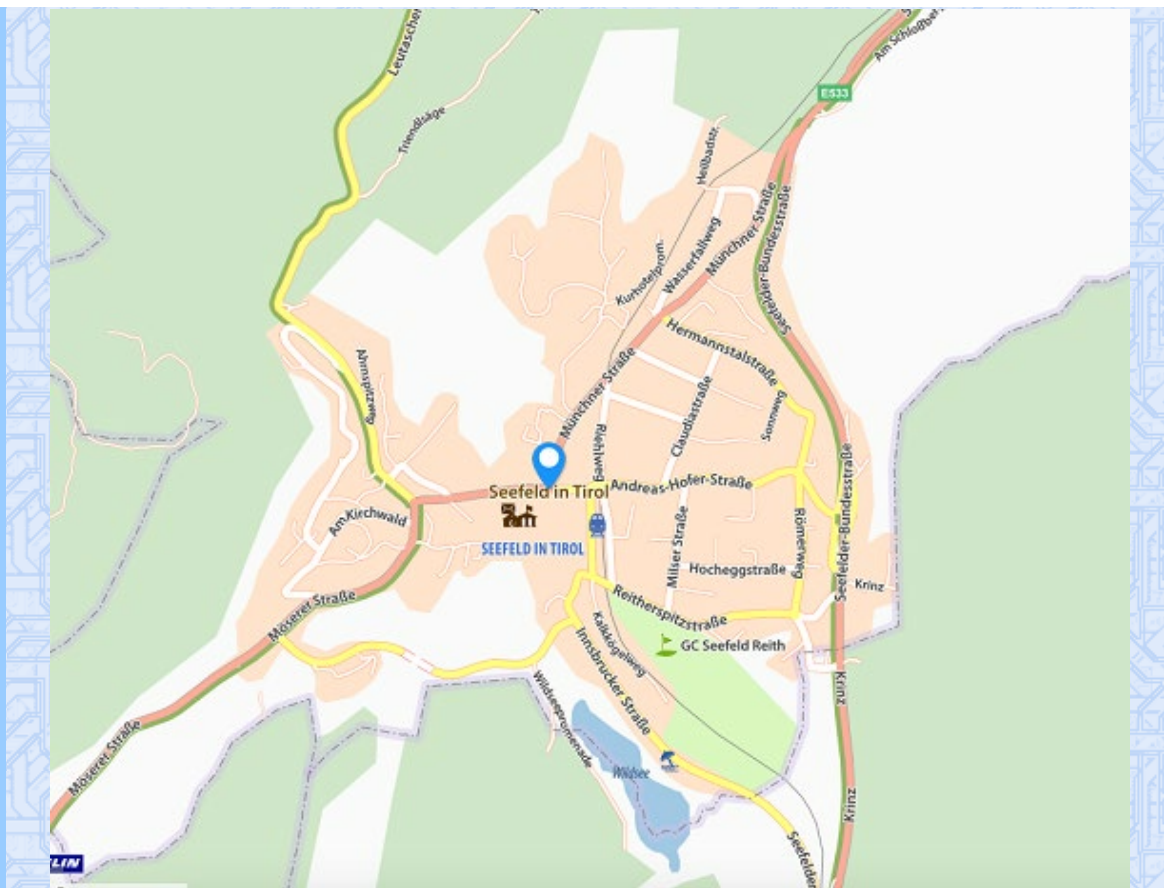
Note: It is a good idea to explore the area near Seefeld with Google Maps, and Google Earth.

How to reach Seefeld and Hotel Bergresort:

From Innsbruck airport by car: Use B171 to A12 5.5 km to B177. Then B177 16 km to Seefeld. Exit at Munchner Strasse drive south 400 m to hotel entrance. The hotel has free parking aboveground and underground parking at 5 euro/day.

From Innsbruck airport by train: There are trains every 20 minutes. Travel time is about 30 minutes. Tirol Bahnhof in Seefeld is about 1.3 km south of the hotel along Munchner Strasse.

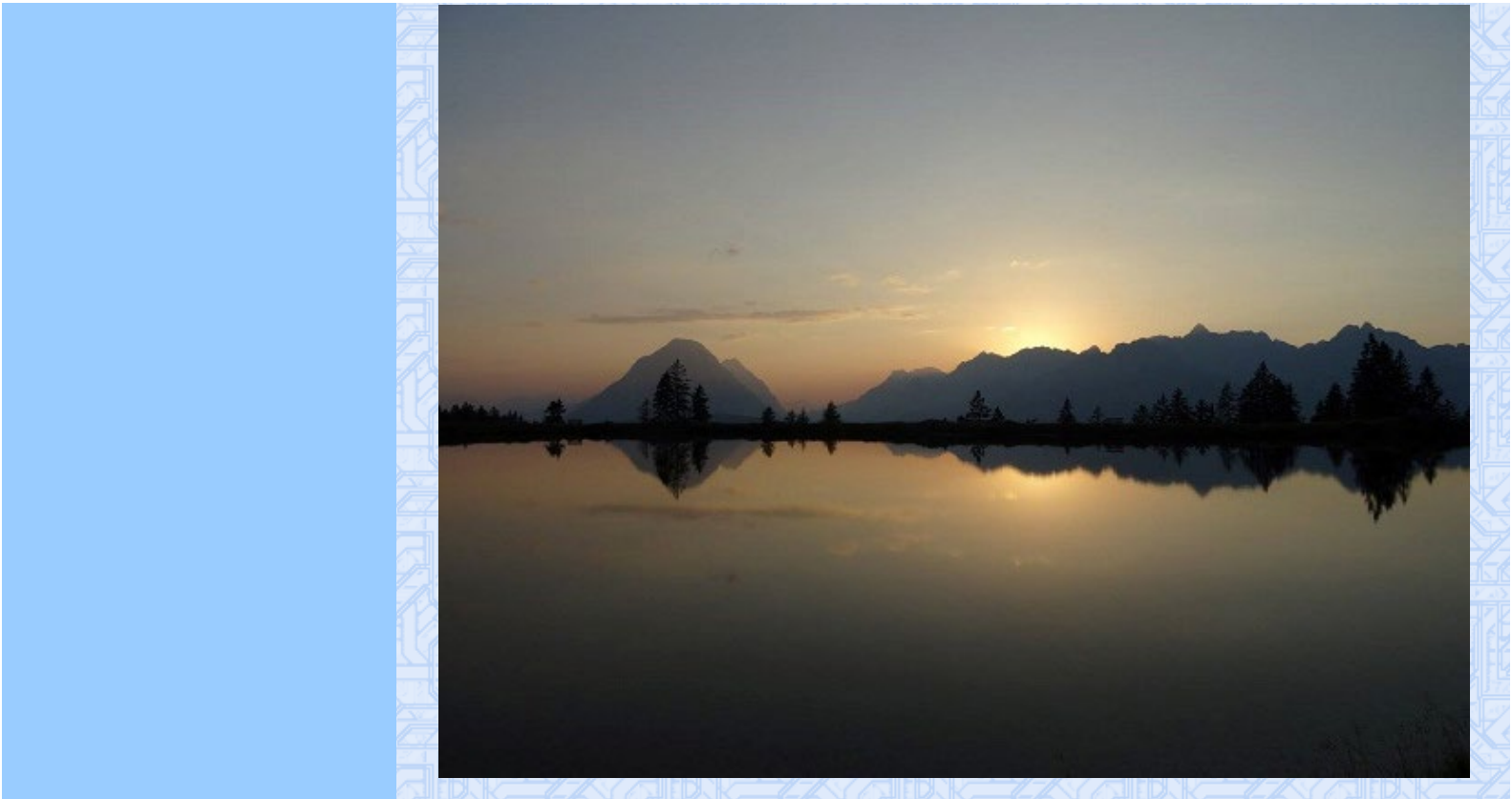
.....
 -- Send in your
registration
 and
abstract
submission form.



There are also a variety of transfer options such as taxi and limos. The hotel can arrange transport from the airport at charges that vary with type, and if notified in advance can provide free shuttle service from the Seefeld train station.

There are other airports that can be considered: Two others are Munich 162km, about 1 hour 50 minutes by car, and Salzburg, 200km, about 2 hours by car.

The hotel has free and ample parking.



ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary Conference

Home

Registration

Potential
Attendees

Travel

Lodging

Meals

Activities

ASIC Format

Sessions

Talk

Submissions

ASIC Websites

Contact

.....



-- Send in your
registration
and
abstract
submission form.

.....

Lodging

We have placed a hold on rooms sufficient for our conference needs at Hotel Bergresort in Seefeld Austria. This is an excellent award winning hotel with good restaurants. The hotel website is at: <https://www.bergresort.at/en/>. The hotel has a large conference room more than adequate for the conference needs. It has free parking and free internet, allows dogs at a low price, has a health and wellness spa, fitness center, sauna and two pools (see photos below), a Jacuzzi, , and two excellent restaurants.





LODGING RATES

Lodging rates given below are inclusive and include breakfast and dinner (see 'Meals and Breaks' on this website). Lodging reservations should be made early starting in the fall of 2018.

- One person:
 - **145.80 Euro day**
- Two persons in one room:
 - **198.60 Euro/day**



CONFERENCE ROOMS:

ASIC will use the large conference room at the hotel (168 meters square); it will be set up classroom style. This room is well equipped technically, and has space at the rear for the reception food and drink that will start each session.

PARKING AND INTERNET:

There is free and ample above-ground parking and underground parking at 5 euro/day. There is free internet in both resident rooms, and conference room.

RESERVATIONS:

To obtain the conference rates, email the organizer to obtain the conference code. Reservations can be made by email or telephone.

Telephone: +43 5212 2191

Email: Rezeption Bergresort

DEPOSITS AND CANCELLATION POLICY:

Reservations will be made and held with a credit card and a code available from the organizer.

Cancellation policy:

- **Free up to two months prior to arrival.**
- **Two months to one month prior to arrival: 40%**
- **One month to one week prior to arrival: 70%**
- **During last week prior to arrival: 90%**



SCHEDULE AND MEALS:

Each day the conference will begin with a reception with refreshments and light food near or in the conference room, starting at about 15:30-15:45. The talks will take place from about 16:00 to 20:00. Following the talks attendees will dine together as a group at the hotel, no later than 20:15 (see '[Meals](#)' on this website).

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary Conference

Home
 Registration
 Potential Attendees
 Travel
 Lodging
 Meals
 Activities
 ASIC Format
 Sessions
 Talk
 Submissions
 ASIC Websites
 Contact

Meals/Dining/Breaks



A generous breakfast is included in the daily lodging price; breakfast is available starting at 7:30 AM. A five course dinner will be served in the hotel restaurant when the sessions end. The dinners will include vegetarian and vegan choices (the number of attendees requiring such options will be assessed shortly prior to the conference). No dinner seatings will be allowed after 20:15 so the conference sessions will be scheduled to end in time to allow the group to move to dinner by that time. Attendees staying elsewhere may join the main group for dinner at a charge of 45 euro (55 Saturday).

The hotel offers free of charge a midday/afternoon snack in the hotel restaurant, during the period from 13.30 until 16.30. Many attendees may be outdoors at those times, and if so can instead attend each day's reception/break that starts each session:

There will be a catered reception with drinks and finger food at each day prior to the speaking session, likely sited at the rear of the conference room. On the first day, June 17, the reception will begin about 15:15. On the other days the reception will start about 15:45. The registration fee includes

.....
 -- Send in your
registration
 and
abstract
submission form.

payment for these receptions/breaks. Guests and family members not attending the sessions, but planning to attend the receptions, have a reduced registration fee.

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

Home

Registration

Potential
Attendees

Travel

Lodging

Meals

Activities

ASIC Format

Sessions

Talk

Submissions

ASIC Websites

Contact

.....



-- Send in your
registration
and
abstract
submission form.

.....

Activities



Hiking in the Seefeld area

(This page will be elaborated in the near future)

There are numerous outdoor and adventure activities both in the immediate Seefeld area, and within a distance allowing a day tour and return by 16:00.

Hiking:

There are too many hiking and walking tours to list. For one introduction see: <https://www.seefeld.com/en/walking>. On this website be sure to look at the description of ten summit tours:

<https://www.seefeld.com/en/walking/10-most-beautiful-summit-tours>. Also look at <https://www.tyrol.com/places/a-seefeld-in-tirol/hiking>



Rock Climbing



There are numerous regions offering sport climbing and bouldering at all levels of difficulty. See: <https://www.climbers-paradise.com/en/>, which also covers bouldering, and <https://www.tyrol.com/things-to-do/sports/climbing/climbing-regions>. I recommend the guidebook (in German and English): Sportclimbing in Tirol published in 2014.

As is our usual practice, we will offer one or two group climbing days (at reduced pricing). These are organized at attractive and scenic venues. Tentatively the first day will be June 18. These days are aimed at all climbers, but particularly newcomers and novices. The novices are taught how to climb on easy routes with topropes in place. The better climbers

come and enjoy climbing on the more challenging routes in the same area.



Canyoning:

See: <https://www.tyrol.com/things-to-do/sports/canyoning>

The participants don wetsuits and with the help of guides enter and descend a mountain stream in a narrow canyon. This exciting activity requires no experience and is suitable for families and children.



Parasailing:

This is another exciting activity that can be enjoyed by novices, when done in tandem with an expert guide. One lifts off typically from a hillside or cliff (usually after a cable ride to reach the start), using a parasail large enough to lift and sail both the guide and the client. The two ascend thermals (often following birds) and eventually descend and land in a field. See for example: <https://www.seefeld.com/en/further-topics/paragliding>.



Road Biking and Mountain Biking:

The Seefeld area has many opportunities for both forms of biking. See for example: <https://www.seefeld.com/en/further-topics/mountain-bikerace-bikee-bike>.



Leisure Activities:

The area has many leisure activities particularly suitable for family and children. These include sports such as golf and tennis, and adventure parks.



Via Ferrata:

The Seefeld region has numerous Via Ferrata. These consist of mountain paths and cliffs affixed with cables and ladders to which the participant attaches with slings and carabiners, allowing safe passage even in the occurrence of a slip or fall. This activity is suitable for all, including

children and families and depending on experience can be done alone or with a guide.



ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

[Home](#)

[Registration](#)

[Potential
Attendees](#)

[Travel](#)

[Lodging](#)

[Meals](#)

[Activities](#)

[ASIC Format](#)

[Sessions](#)

[Talk](#)

[Submissions](#)

[ASIC Websites](#)

[Contact](#)

Format / Schedule

There will be a single speaking session each day each with seven (or more) talks. There are no posters. These sessions will be held in a conference room Hotel Bergresort. Normal talk duration will be 30 minutes including questions and discussion. However, if there are more than 42 presenters, then some talks will be assigned shorter time limits. Information on submitting proposals for presentations is on the page of this website labeled "Talk Submissions".

The conference will start with registration and a reception at about 15:15 on Saturday, June 17. On subsequent days there will be drinks and light snacks from about 15:45 - 16:15, followed by a speaking session. Dinner at the hotel will follow the session at about 20:00 - 20:15.

.....



-- Send in your
registration
and
abstract
submission form.

.....

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary Conference

- Home
- Registration
- Potential Attendees
- Travel
- Lodging
- Meals
- Activities
- ASIC Format
- Sessions
- Talk
- Submissions
- ASIC Websites
- Contact

Sessions



.....

NEW -- Send in your **registration** and **abstract submission form.**

.....

Speakers should plan on 30 minutes of speaking time. That would leave 5-8 minutes for interruptions and questions.

Monday, June 17. Chair: *Brad Love*

Harald Atmanspacher: "Temporal Nonlocality"

Jay Holden (w Colin Annand): "A Dynamic account of Sequential Dependencies in Response Time."

Adam Osth (w Simon Farrell): "Applying Multialternative Decision-making Models to Serial Recall Initiation"

Vladimir Sloutsky (w Olivera Savic, Lyla Unger): "Co-occurrence Statistics, Taxonomic Organization, and Semantic Development"

Eric-Jan Wagenmakers: "A Bayesian Perspective on the Difference Between Prediction and Accommodation"

Chen Yu: "Examining Statistical Learning Mechanisms from the Infant's Perspective"

Tuesday, June 18. Chair: *Diane Pecher*

Jeremy Frimer: "Is "Going High" or "Going Low" the Winning Political Strategy? Uncivil Politics and Social Judgment in the Trump Era"

Jerome Busemeyer (w Peter Kvam, Tim Pleskac): "Markov versus Quantum Dynamic Models of Belief Change during Evidence Monitoring"

Pat Cheng (w Jeffrey Bye, Pei-Jung Chuang): "When Do Reasoners Generalize which Type of Causal-integration Functions?"

Peter Dixon (w Scott Glover): "Model Comparison with Sequential Sampling"

Bob French (w Daniel Defays): "Chunking in Music Perception: An Exploration using TRACX2"

Matt Jones: "Causal and Probabilistic Approaches to Contextuality"

Wednesday, June 19. Chair: *Bob French*

Diane Pecher (w Heleen Mierlo, Samantha Bouwmeester): "Age Categorization and Stereotyping"

John Dunn (w Li-Lin Rao, Laura Anderson): "Models of Risky Choice: A Signed Difference Analysis"

Asher Koriat: "Doubts about Confidence: Monitoring The Accuracy of Our Own Judgments"

Dan Little (w Anthea Blunden, Dylan Hammond, Lauren Fong, Piers Howe): "Characterizing the Architecture and Integration Rule of Change Detection Decisions"

Franco Pestilli (w Brent McPherson): "Human Age is Predicted by a Linear Covariation of Brain Network and Behavioral Factors"

Vencislav Popov (w Matt So, Lynne Reder): "Word Frequency Affects Binding Probability not Memory Precision"

Thursday, June 20. Chair: *Rob Goldstone*

Eric Weichselgartner: "Do Open Science Practices Improve Research Quality in Psychology?"

Ghislain Fourny: "Perfectly Transparent Equilibrium: Generalizing

Superrationality to Non-symmetric Games”

Rich Shiffrin: “An Algorithm for Virtual and Actual Bargaining between Two Selfish Agents”

Gaen Plancher (w Sam Harding, Kiran Kumar, Suyog Chandramouli, Richard Shiffrin): “On Maintenance of Continuous Representation”

Klaus Oberauer: “An Interference Model of Visual Working Memory: Connectionist Implementation”

Friday, June 21. Chair: Klaus Oberauer

Rene Zeelenberg (w Diane Pecher, Ludovic Ferrand): “Stroop Effects and Response Discrimination”

Olivia Guest (w Bradley Love): “Levels of Representation in a Deep Learning Model of Categorization”

Sharon Chen (w Amy Criss): “The Source of List Strength Effect in Recall Memory”

Rob Goldstone (w Jonathan Tullis): “Why Does Peer Instruction Help?”

Roger Ratcliff (w Gail McKoon): “Modeling Response Signal Functions and Collapsing Bounds”

Barbara Doshier: “Perceptual learning in multi-alternative judgments”

Saturday, June 22. Chair: Rene Zeelenberg

Andy Wills: “Benchmark Phenomena in Category Learning”

Stephan Lewandowsky: “Cofveve and Flooding: Strategic Distraction of the Public's Attention”

Brad Love: “Coherency Seeking as a Driver of Preferences”

Zhong-Lin Lu: “A Consistent Organizational Structure Across Multiple Functional Subnetworks of the Human Brain”

George Sperling (w Sun Peng): “Deriving and Applying a Theory of How Visual Motion-direction Is Perceived”

Paul Munro: “Visualization of the Geometry and Dynamics of Hidden Unit Space”

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

Home
Registration
Potential
Attendees
Travel
Lodging
Meals
Activities
ASIC Format
Sessions
Talk
Submissions
ASIC Websites
Contact



Submissions of Talks and Posters

Whether or not you have already sent some of this information to the organizer by email, please provide on the link below a list of authors (with the presenter indicated), their affiliations, and emails; a title, and an abstract (limit 250 words). These may be changed later, so do not hesitate to send them as early as possible. The organizer will use these to plan the conference and organize the sessions.

Please go to the [submission form](#)

If attendance allows regular length talks, these will be limited to 30 minutes, a time that includes interruptions for questions, and final discussion. It would be best to plan for 20-24 minutes of actual speaking. The talks should be aimed not at specialists, but at a general scientific audience. Note: In order to add this information to the webpage you should use the same code that you will use to make lodging reservations. This code can be obtained by emailing the organizer at

There is room on the program for about 42 30-minute talks (perhaps 48 25-

.....
 -- Send in your
registration
 and
abstract
submission form.

.....

minute talks). If there are more attendees wanting to present research than time permits, then the organizer will either choose some talks to be of shorter duration, or in extremity, decide which attendees will give presentations. Thus when registering and filling out the submission form, please indicate if you might be willing to 1) give a shorter talk; 2) forego giving a talk.

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

[Home](#)

[Registration](#)

[Potential
Attendees](#)

[Travel](#)

[Lodging](#)

[Meals](#)

[Activities](#)

[ASIC Format](#)

[Sessions](#)

[Talk](#)

[Submissions](#)

[ASIC Websites](#)

[Contact](#)

.....



-- Send in your
registration
and
abstract
submission form.

.....

ASIC CONFERENCES and WEBSITES:

(clicking on any site from 2005 and later will bring you to that ASIC website)

- 2002: Squamish, British Columbia
- 2003: Squamish, British Columbia
- 2004: Cavalese, Dolomites, Italy
- 2005: Briancon, France
- 2006: Andalsnes, Norway
- 2007: Kalymnos, Greece
- 2008: Madonna di Compiglio, Dolomites, Italy
- 2009: Aosta, Aosta Valley, Italy
- 2010: Bend, Oregon
- 2011: Boi Valley, Pyrenees, Spain
- 2012: Cala Gonone, Sardinia, Italy
- 2013: Cortina d'Ampezzo, Dolomites, Italy
- 2014: Moab, Utah
- 2015: Mammoth Lakes, California
- 2016: Selva, Val Gardena, Dolomites, Italy
- 2017: Interlaken, Switzerland
- 2018: Loano, Italian Riviera, Italy
- 2019: Seefeld, Austria
- 2021: San Martino di Castrozza, Italy
- 2022: Chamonix, France
- 2022: Queenstown, New Zealand
- 2023: Kranjska Gora, Slovenia

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary Conference

- Home
- Registration
- Potential Attendees
- Travel
- Lodging
- Meals
- Activities
- ASIC Format
- Sessions
- Talk
- Submissions
- ASIC Websites
- Contact



Contact Information:

Conference Organizer

Rich Shiffrin
 Indiana University - Bloomington

Tel: [Redacted]
 Fax: [Redacted]

Webmaster/Conference Coordinator

Please direct questions concerning the website to the webmaster(s): Ruth Eberle

Phone: (812) [Redacted]

Oyedotun Oyesanmi
 Phone: (812) [Redacted]

.....
 -- Send in your **registration** and **abstract submission form.**



Email preferred but if necessary address correspondence to:

**Annual Summer Interdisciplinary Conference (ASIC 2016)
c/o Prof. Richard Shiffrin
Psychological and Brain Sciences Department
Indiana University
1101 E. 10th St.
Bloomington, IN 47405**

ASIC 2019

ASIC 2019: Eighteenth Annual Summer Interdisciplinary
Conference

[Home](#)
[Registration](#)
[Potential Attendees](#)
[Travel](#)
[Lodging](#)
[Meals](#)
[Activities](#)
[ASIC Format](#)
[Sessions](#)
[Talk](#)
[Submissions](#)
[ASIC Websites](#)
[Contact](#)

.....

 -- Send in your

registration
 and
abstract
submission form.

.....



Authors, Titles, Abstracts, Presentations

Listing by speaker

Speaker	Atmanspacher, Harald
Author 1	Atmanspacher, Harald Collegium Helveticum, ETH Zurich and University Zurich
Title	Temporal Nonlocality
Abstract	The concept of nonlocality is firmly established as a key feature of quantum physics. It has been demonstrated many times by violations of Bell-type inequalities which are derived on the assumption that a system's properties are defined strictly locally.

Analogous to this spatially conceived nonlocality, one can formulate temporal Bell inequalities, whose violation would imply a temporal kind of nonlocality. It entails that states of a system are not crisply localized in time but range over a temporal interval of non-vanishing duration, expressing the idea of an extended present. Corresponding ideas have often been discussed in phenomenological analyses of mental states. This presentation will take the concept of temporal nonlocality from phenomenology to the psychophysics of bistable perception. A quantum-inspired model of bistable perception, the Necker-Zeno model, violates temporal Bell inequalities and offers options to test such violations experimentally.

Speaker	Busemeyer, Jerome
Author 1	Busemeyer, Jerome Indiana University
Author 2	Kvam, Peter Indiana University
Author 3	Pleskac, Tim University of Kansas
Title	Markov versus quantum dynamic models of belief change during evidence monitoring
Abstract	Two different dynamic models for belief change during evidence monitoring were evaluated: Markov and quantum. They were empirically tested with an experiment in which participants monitored evidence for an initial period of time, made a probability rating, then monitored more evidence, before making a second rating. The models were qualitatively tested by manipulating the time intervals in a manner that provided a test for interference effects of the first rating on the second. The Markov model predicted no interference whereas the quantum model predicted interference. A quantitative comparison of the two models was also carried out using a generalization criterion method: the parameters were fit to data from one set of time intervals, and then these same parameters were used to predict data from another set of time intervals. The results indicated that some features of both Markov and quantum models are needed to accurately account for the results

Speaker	Chen, Sharon
Author 1	Chen, Sharon Syracuse University
Author 2	Criss, Amy Syracuse University
Title	The Source of List Strength Effect in Recall Memory
Abstract	List strength effect (LSE) constrains memory models, and hence is of

importance to study. The list strength paradigm asks whether strong memories affect other memories in the same list. Consistently, we have found strong memories harm other memories in free recall (a positive LSE), don't affect other memories in cued recall (a null LSE), and benefit other memories in recognition (a negative LSE). Reliance on context or item information in the retrieval cue has been thought to be the source of LSE (Ratcliff, Clark and Shiffrin, 1990; Shiffrin, Ratcliff, & Clark, 1990). However, in a typical experimental design, cue type is confounded with the level of competition. A context cue is shared by all items and memories compete to get sampled, therefore the competition is high. An item cue is uniquely paired with another item and the competing memory set is narrow, producing a low level of competition. Therefore, in this project, we manipulated both cue type and the level of competition independently in a list strength paradigm. Data shows the direction and magnitude of LSE was determined by whether the cue is shared by all, half of, a quarter of the items, or one unique item. There was no effect of whether the cue is context or item. We discussed our results within the framework of the retrieving effectively from memory (REM) model.

Speaker	Cheng, Patricia
Author 1	Bye, Jeffrey University of Minnesota
Author 2	Chuang, Pei-Jung University of California, Los Angeles
Author 3	Cheng, Patricia University of California, Los Angeles
Title	When do reasoners generalize which type of causal-integration functions?
Abstract	Two approaches have addressed the problem of how reasoners generalize their causal knowledge of integration functions, functions that specify how causes combine their effects. The predominant approach has focused on reasoners' ability to learn domain-specific integration functions for causes of an outcome, and generalize the empirically acquired functions to apply to novel stimuli in the same or a similar domain. An alternative approach treats useable causal knowledge as a goal of causal learning in a reality that is inherently representation-dependent. This approach poses the question: How do reasoners formulate useable causal knowledge, that is, formulate causes of an outcome that are invariant across the learning and application contexts? Whereas the domain-based empirical learning view predicts that reasoners would generalize an acquired integration function across levels of representation within a familiar domain, the causal-invariance view predicts that – even when in their experience all causes in a domain have non-invariant integration functions – reasoners would formulate causes that

remain invariant across contexts, and default to causal-invariance integration functions for such causes in the domain. This presentation reports an experiment testing the two approaches. The results favor the causal-invariance approach, suggesting that the goal of constructing useable (i.e., causally-invariant) knowledge imposes an a priori constraint in human causal induction.

Speaker	Dixon, Peter
Author 1	Dixon, Peter University of Alberta
Author 2	Glover, Scott Royal Holloway University of London
Title	Model Comparison with Sequential Sampling
Abstract	A standard prescription in experimental design is to begin with an estimate of the expected standardized effect size and then select a sample size to achieve adequate power. However, in many contexts, the standardized effect size is difficult to estimate because there is little prior information about variability. In contrast, much more information may be available concerning the (unstandardized) size of a theoretically interesting effect. If such an effect can be identified, sequential sampling can be used to readily distinguish that effect from a null effect without selecting a sample size a priori. The approach is efficient in terms of number of subjects, has a low probability of error, and can easily provide compelling evidence for either the null effect or the theoretically interesting effect.

Speaker	Dosher, Barbara
Author 1	Dosher, Barbara University of California, Irvine
Author 2	Dosher, Barbara
Title	Perceptual learning in multi-alternative judgments
Abstract	Using n-alternative choice (nAFC) tasks to study visual perceptual learning (almost always studied in 2AFC) provides a context for comparing different forms of supervision during learning and, separately, to assess differential generalization over feature dimension. The relative rate and success of learning depends in a systematic way on whether fully supervised (response feedback), partially supervised (accuracy feedback), and unsupervised (no feedback) occur during learning. Transfer of learning across changes in a task-irrelevant feature dimensions suggest partial specificity to all specific trained stimuli and also a role of feature-invariance in training. An extension of the Integrated Reweighting Theory of perceptual learning accounts for many features of the data including changes in percent correct (or contrast thresholds), and confusion matrices.

Speaker	Dunn, John
Author 1	Dunn, John University of Western Australia
Author 2	Rao, Li-Lin Chinese Academy of Sciences
Author 3	Anderson, Laura Binghamton University
Title	Models of risky choice: A signed difference analysis
Abstract	Signed difference analysis is a methodology that is used to derive a set of ordinal predictions from a mathematical model. It generalizes state-trace analysis to models with more than one latent variable where each of two or more dependent variables is an arbitrary monotonic function of a specified function of the latent variables. This is a property of many models of risky choice in which the probability of choosing option A over option B is an unknown monotonic function of a model-specific function of the subjective utilities of the two options (and potentially additional parameters). We consider two models of risky choice – the fixed utility model (e. g., cumulative prospect theory) and the random subjective expected utility (RSEU) model proposed by Busemeyer and Townsend (1993). The main difference between the two models is that the predictions of the fixed utility model depend only on the difference between the utilities of the two options while those of the RSEU model also the utilities are modified by a term representing their subjective variance. We derive critical predictions from each of these models and test them against data from two experiments.

Speaker	Fourny, Ghislain
Author 1	Fourny, Ghislain ETH Zurich
Title	Perfectly Transparent Equilibrium: Generalizing superrationality to non-symmetric games
Abstract	I will introduces a new solution concept for non-cooperative games in normal form with no ties and pure strategies: the Perfectly Transparent Equilibrium. The players are rational in all possible worlds and know each other's choice of strategies in all possible worlds. A player's decision is perfectly correlated with its anticipation by other players, unlike in Nash equilibria where the decisions are made independently. The equilibrium, when it exists, is unique and is Pareto optimal. This equilibrium is the normal-form counterpart of the Perfect Prediction Equilibrium, where the prediction happens "in another room" rather than in the past. The equilibrium can also be seen as a natural extension of Hofstadter's superrationality to non-symmetric games. Algorithmically, an

iterated elimination of non-individually-rational strategy profiles is performed until at most one remains. An equilibrium is a strategy profile that is immune against knowledge of strategies in all possible worlds and rationality in all possible worlds, a stronger concept than common knowledge of rationality and than common counterfactual belief of rationality. We will define the Perfectly Transparent Equilibrium algorithmically and go into its properties: uniqueness, Pareto-optimality, coincidence with the Hofstadter equilibrium on symmetric games. We also relate to concepts found in literature such as Individual Rationality, Rationalizability, Halpern's and Pass's Minimax-Rationalizability, Second-Order Nash Equilibria, the Program Equilibrium, the Perfect Prediction Equilibrium, Shiffrin's Joint-Selfish-Rational Equilibrium, the Stalnaker-Bonanno Equilibrium, the Perfect Cooperation Equilibrium and the Translucent Equilibrium.

Speaker	French, Bob
Author 1	Defays, Daniel University of Liège (Belgium) & Eurostat, Eur.Commission
Author 2	French, Bob French National Scientific Research Center (CNRS)
Title	Chunking in music perception: An exploration using TRACX2
Abstract	<p>Various approaches to understanding music perception have been explored. Algorithms have been designed to identify patterns of notes that occur repeatedly in a piece of music. Various theoretical models have proposed sets of rules to model how sounds are grouped (or "chunked") when listening to music and numerous experiments have studied the validity of these rules. Identification of cues, imprints and prototypes have been shown to play key roles in music perception. The approach presented in this paper is not rule-based. Rather, our starting point is TRACX, a connectionist model of word segmentation and chunking. This memory-based model and a more recent version of it, TRACX2, have proven remarkably successful in extracting simple structures from sequences of syllables and images. We have attempted to apply TRACX to music perception. Largely for reasons of simplicity, we focused only on the notes (and intervals between notes) in children's songs. Sets of children's songs form a corpus of relatively homogeneous musical pieces that can reasonably be seen as "one language" and can be compared to more complex musical structures, such as a Bach sonata or a Chopin fantasy, which we have done. In the simulations reported here, we had to modify the purely localist coding scheme used in previous work with TRACX. The coding scheme for musical sequences requires a metric on the space of intervals that accurately reflects the different sizes of the intervals. So, for example, the interval between, say, a C and a D, is considerably different than that between C and G and this had to be represented in the input coding. The results from this metric coding are considerably different than</p>

those using a localist input coding. We will discuss a series of results, sometimes unexpected, from our simulations of musical perception and chunk formation using the TRACX model. We will discuss these results in light of related empirical work and suggest experiments to confirm or refute the results of these simulations.

Speaker	Frimer, Jeremy
Author 1	Frimer, Jeremy University of Winnipeg, Canada
Title	Is “Going High” or “Going Low” the Winning Political Strategy? Uncivil Politics and Social Judgment in the Trump Era
Abstract	<p>People generally evaluate civility more favorably than incivility. Yet, it can sometimes seem that incivility is a winning strategy in realm of politics. In hyper-partisan political environments, politicians appear to “throw red meat to their base” by unleashing uncivil, personal attacks against their opponents, satisfying the aggressive desires of their most hyper-partisan supporters, and thus potentially redoubling their approval among them. For instance, after issuing more than 2 insults per day on Twitter alone, Donald Trump won the U.S. presidency. The data I will present, however, failed to support the notion that “going low” can elicit social approval. Rather, a series of longitudinal and experimental studies found that civil language directed at political opponents consistently elicited greater approval than uncivil attacks. Even self-identified “diehard supporters” of President Trump, for example, evaluated the president more favorably after he responded with civility to a personal attack. Incivility made the speaker seem less warm and did less to affect perceptions of dominance or honesty. This warmth deficit explained the reputational costs of incivility. These findings suggest that Donald Trump won the U.S. presidency not because, but in spite, of his uncivil remarks, and that the unwritten norm of noblesse oblige remains alive and well.</p>

Speaker	Goldstone, Robert
Author 1	Tullis, Jonathan University of Arizona
Author 2	Goldstone, Robert Indiana University
Title	Why does peer instruction help?
Abstract	<p>In peer instruction, instructors pose a challenging question to students, students answer the question individually, students discuss their answers with a peer in the class, and finally students answer the question again. A large body of evidence has been generally consistent in showing benefits to student learning outcomes due to peer instruction. To help determine the mechanism</p>

for these benefits, we collected semester-long data from six classes, involving a total of 208 undergraduate students being asked a total of 86 different questions related to their regular course content. For each question, students were paired into dyads and presented with a multiple-choice question. Students chose their answer individually, reported their confidence, reported their partner's answer and confidence, discussed their answers with their partner, and then indicated their possibly revised answer and confidence again. Overall, students were more accurate and confident after discussion than before. Initially correct students were more likely to keep their answers than initially incorrect student, and this tendency was partially but not completely attributable to differences in confidence. We discuss the benefits of peer instruction in terms of differences in the coherence of explanations, social learning, and the contextual factors that influence confidence and accuracy.

Speaker	Guest, Olivia
Author 1	Guest, Olivia UCL
Author 2	Love, Bradley UCL
Title	Levels of Representation in a Deep Learning Model of Categorization
Abstract	<p>Deep convolutional neural networks (DCNNs) rival humans in object recognition. The layers (or levels of representation) in DCNNs have been successfully aligned with processing stages along the ventral stream for visual processing. Here, we propose a model of concept learning that uses visual representations from these networks to build memory representations of novel categories, which may rely on the medial temporal lobe (MTL) and medial prefrontal cortex (mPFC). Our approach opens up two possibilities: a) formal investigations can involve photographic stimuli as opposed to stimuli handcrafted and coded by the experimenter; b) model comparison can determine which level of representation within a DCNN a learner is using during categorization decisions. Pursuing the latter point, DCNNs suggest that the shape bias in children relies on representations at more advanced network layers whereas a learner that relied on lower network layers would display a color bias. These results confirm the role of natural statistics in the shape bias (i.e., shape is predictive of category membership) while highlighting that the type of statistics matter, i.e., those from lower or higher levels of representation. We use the same approach to provide evidence that pigeons performing seemingly sophisticated categorization of complex imagery may in fact be relying on representations that are very low-level (i.e., retinotopic). Although complex features, such as shape, relatively predominate at more advanced network layers, even simple features, such as spatial frequency and orientation, are better represented at the more</p>

advanced layers, contrary to a standard hierarchical view.

Speaker	Holden, Jay
Author 1	Annand, Colin University of Cincinnati Psychology Department
Author 2	Holden, Jay University of Cincinnati Psychology Department
Title	A Dynamic account of Sequential Dependencies in Response Time.
Abstract	An established dynamical system is used to model the classic effects of repetition, alternation, as well as the error rates and mean response times of the various permutations of 1- to 5-trial sequences in 2-alternative forced choice tasks.

Speaker	Jones, Matt
Author 1	Jones, Matt University of Colorado
Title	Causal and Probabilistic Approaches to Contextuality
Abstract	A primary goal in recent research on contextuality has been to extend this concept to cases of inconsistent connectedness, where observables have different distributions in different contexts. I propose a solution within the framework of probabilistic causal models, which extend hidden-variables theories, and then demonstrate an equivalence to the contextuality-by-default (CbD) framework of Dzhafarov and colleagues. CbD distinguishes contextuality from direct influences of context on observables, which it defines purely in terms of probability distributions. Here I take a causal view of direct influences, defining direct influence within any causal model as the probability of all hidden or latent states of the system in which a change of context changes the outcome of a measurement. Model-based contextuality (M-contextuality) is then defined as the necessity of stronger direct influences to model a full system than to model each observable individually. For consistently connected systems, M-contextuality agrees with traditional contextuality. For general systems, it is proved that M-contextuality is equivalent to the property that any model of a system must contain "hidden influences", meaning direct influences that go in opposite directions for different latent states, or equivalently signaling between observers that carries no information. This criterion can be taken as formalizing the "no-conspiracy" principle that has been proposed in connection with CbD. M-contextuality is then proved to be equivalent to CbD-contextuality, thus providing a new interpretation of CbD-contextuality as the non-existence of a model for a system without hidden direct influences.

Speaker	Koriat, Asher
Author 1	Koriat, Asher University of Haifa
Author 2	Koriat, Asher
Author 3	Koriat, Asher
Author 4	Koriat, Asher
Author 5	Koriat, Asher
Author 6	Koriat, Asher
Title	Doubts about Confidence: Monitoring The Accuracy of Our Own Judgments
Abstract	<p>Advocates of the ecological approach to cognition, beginning with Brunswik (1955) have voiced a plea for a representative design that respects the conditions to which our mind has adapted through evolution and learning. They argued that research items ought to be sampled representatively from the natural ecology. However, precisely because of people's adaptation to reality, representative samples are bound to be biased, yielding much better performance than chance. Thus, in many domains (perception, memory, general information, reasoning), the percentage of correct answers is much higher than 50% for most 2-alternative forced-choice items. What are the implications of this bias in Object-Level accuracy (OLA) for Meta Level Accuracy (MLA) – people's ability to monitor the accuracy of their first-order judgments? In general, the confidence/accuracy (C/A) relationship has been found to be very high in many domains to the extent that confidence judgments are routinely used to aid in the modelling of decision processes. However, we found the C/A relationship to be positive and high only for “representative” samples of items for which $OLA > 50\%$. In contrast, when items were deliberately compiled for which $OLA < 50\%$, confidence judgments were counterdiagnostic of accuracy: For these items, wrong decisions were associated consistently and significantly with higher confidence than correct decisions. This pattern was observed across some 20 tasks, covering a variety of domains. The results suggest that confidence judgments are based on a heuristic that has been tailored specifically to the world we live in for which OLA is relatively good. A theory of the process underlying subjective convictions is proposed that has implications for several issues including social conformity, group decisions, and the wisdom of crowds.</p>

Speaker	Lewandowsky, Stephan
Author 1	Lewandowsky, Stephan University of Bristol
Author 2	Lewandowsky, Stephan
Title	Cofveve and flooding: Strategic distraction of the public's attention

Abstract	<p>Many observers have expressed concern about the status of evidence and facts in current political discourse, in particular in the United States and United Kingdom. The word “post-truth” was word of the year in 2016, only to be replaced by “fake news” in 2017. According to fact-checkers, Donald Trump has issued more than 8,000 false or misleading claims since assuming the presidency. I present evidence concerning the fallout of President Trump's falsehoods, focusing on a number of studies that have dissociated people's beliefs in specific claims from their voting intentions or feelings for a political candidate. I conclude that in the United States, unlike Australia, truth-telling plays little role in voter estimation of candidates. I also report a recent analysis of Donald Trump's tweets and show how they can successfully distract the public from topics that are potentially harmful to the president. I interpret the results in the context of people's naïve ontology of truth and its knowability.</p>
-----------------	---

Speaker	Little, Daniel R.
Author 1	Blunden, Anthea The University of Melbourne
Author 2	Hammond, Dylan The University of Melbourne
Author 3	Fong, Lauren The University of Melbourne
Author 4	Howe, Piers D. L. The University of Melbourne
Author 5	Little, Daniel R. The University of Melbourne
Title	Characterising the architecture and integration rule of change detection decisions
Abstract	<p>In this talk, I will discuss a novel approach to characterising decision making based on information held in visual short term memory. Specifically, we seek to diagnose decision making processes in a one-shot multi-element change detection task, as either serial, parallel, or coactive in nature. We additionally seek to characterise whether the integration rule for each change decision is based on the maximum evidence strength or the sum of strengths across elements. We adapt a logical rule model of perceptual categorization, which assumes that each element is represented as a Gaussian distribution of perceptual effects by assuming that the strength of a change is represented as a folded-normal distribution. We factorially manipulate the magnitude of change for a given element and whether a change decision requires an OR or an AND decision rule. This approach is novel in that it provides a way to unify signal detection models of change detection (Maximum Difference and Summed Difference models) with models of information processing.</p>

Speaker	Love, Bradley
Author 1	Love, Bradley UCL
Title	Coherency Seeking as a Driver of Preferences
Abstract	<p>In uncertain environments, effective decision makers balance exploiting options that are currently preferred against exploring alternative options that may prove superior. For example, a honeybee foraging for nectar must decide whether to continue exploiting the current patch or move to a new location. When the relative reward of options changes over time, humans explore in a normatively correct fashion, exploring more often when they are uncertain about the relative value of competing options. However, rewards in these laboratory studies were objective (e.g., monetary payoff), whereas many real-world decision environments involve subjective evaluations of reward (e.g., satisfaction with food choice). In the subjective case, rather than choices following preferences, preferences may follow choices. With subjective rewards, rather than minimize uncertainty, people may seek to maximize coherency between their preferences and behavior, which would make them less likely to explore the more they exploit. We found this choice pattern over several years in 280,000 anonymized supermarket customers. In a follow-up study, as predicted by coherency maximization, customers preferred coupons to explore alternative products when they had recently started an exploitation streak. We developed a model of how preferences, represented as a weighted vector in a multidimensional space, develop in light of choices. Laboratory studies confirmed the predictions of the model, including a study of how opinions on hot-button issues, such as immigration, abortion, and free trade, develop as a consequence of making a political choice (e.g., voting).</p>

Speaker	Lu, Zhong-Lin
Author 1	Lu, Zhong-Lin The Ohio State University
Title	A Consistent Organizational Structure Across Multiple Functional Subnetworks of the Human Brain
Abstract	<p>A recurrent theme of both cognitive neuroscience and network neuroscience is that the brain has a consistent subnetwork structure that maps onto functional specialization for different cognitive tasks, such as vision, motor skills, and attention. Understanding how regions in these subnetworks relate is thus crucial to understanding the emergence of critical cognitive processes. However, the organizing principles that guide how regions within subnetworks communicate, and whether there is a common set of principles across subnetworks, remains unclear. This is partly due to available tools not being suited to precisely quantify the role that different characteristics of network properties play in the organization of a</p>

subnetwork. We recently developed a mathematical framework, the correlation generalized exponential random graph model (cGERGM) to quantify subnetwork structure. The cGERGM models a correlation network, such as those given in functional connectivity, as a function of activation motifs, that is, consistent patterns of co-activation (i.e., connectivity) between collections of nodes that describe how the regions within a network are organized, and anatomical properties, that is, relationships between the regions that are dictated by anatomy (e.g., Euclidean distance). We applied the model to nine functional subnetworks and found remarkably consistent organizational properties guiding subnetwork architecture, suggesting a fundamental organizational basis for subnetwork communication. Specifically, all subnetworks displayed greater clustering than would be expected by chance, but lower preferential attachment (i.e., hub use), suggesting that human functional subnetworks follow a segregated highway structure rather than the small-world structure found in the whole-brain.

Speaker	Munro, Paul
Author 1	Munro, Paul University of Pittsburgh
Title	Visualization of the Geometry and Dynamics of Hidden Unit Space
Abstract	Classification by multilayer neural networks depends on the existence of appropriate features in the early hidden layers, so that the representations are linearly separable in the penultimate layer. By using hidden layers with just two or three units, the representational structure of the intermediate layers can be visualized. Time courses of the evolution of the hidden layer representations are visualized as animations. The visualizations reveal tendency for the hidden unit image of the input space to collapse into a non-linear (warped) manifold of lower dimensionality; i.e. the weight matrix is (nearly) singular. A task which is not linearly separable in the input space is rendered linearly separable by the warping of the manifold. Because of the matrix singularity, deeper layers of the network do not have sufficient information to reconstruct the input in its original form. Thus, the deep layers are incapable of discriminating certain distinct stimulus patterns.

Speaker	Oberauer, Klaus
Author 1	Oberauer, Klaus University of Zurich
Title	An Interference Model of Visual Working Memory: Connectionist Implementation
Abstract	Most computational models of visual working memory (VWM)

assume either a number of discrete slots, or a continuously varying resource, as the cause of the capacity limit of VWM. Recently, Hsuan-Yu Lin and I proposed an alternative model, based on three core assumptions: (1) Access to information in VWM relies on cue-based retrieval, which entails interference as one cause of the system's limited capacity. (2) Encoding of every stimulus brings with it some degree of background noise generated spontaneously in the neural system. (3) One item is maintained in the focus of attention of working memory, which holds a representation with particularly high precision, and protects it to some extent from interference and noise. This model, initially formulated as a closed-form mathematical model, fit benchmark data better than its competitors (Oberauer & Lin, 2017). Here I present a connectionist implementation of the interference model, which enables a more fine-grained analysis of hypothetical mechanisms. I will present simulations with this model, focusing on three sets of effects: (a) Effects of set size and serial position on performance, (b) effects of retro-cues – cues presented during the retention interval indicating the to-be-tested item – in several experimental paradigms, and (c) effects of set size and individual differences on the contralateral delay activity (CDA), an important neural marker of VWM capacity. Reference: Oberauer, K., & Lin, H.-Y. (2017). An interference model of visual working memory. *Psychological Review*, 124, 21-59.

Speaker	Osth, Adam
Author 1	Osth, Adam University of Melbourne
Author 2	Farrell, Simon University of Western Australia
Title	Applying multialternative decision-making models to serial recall initiation
Abstract	Recent work applying models of multialternative decision making models to free recall initiation uncovered some counter-intuitive results about primacy and recency effects. Specifically, primacy effects were best captured by a mixture of primacy and recency gradients rather than a single combined non-monotonic function. This constraint was driven by the fact that latency differences between primacy and recency items were much larger than predicted by a combined model, whereas the mixture model exhibited considerably more flexibility in capturing this pattern. In this work, we apply the same modeling techniques to a number of immediate serial recall datasets, a task which exhibits considerably more primacy than free recall. In addition, there is the added constraint that participants can indicate omissions. We again found considerable support for a mixture model, as the large latency differences between correct responses, transpositions, and omissions of report were not able to be captured by a single drift rate function.

Speaker	Pecher, Diane
Author 1	Pecher, Diane Erasmus University Rotterdam
Author 2	Van Mierlo, Heleen Erasmus University Rotterdam
Author 3	Bouwmeester, Samantha Erasmus University Rotterdam
Title	Age Categorization and Stereotyping
Abstract	Age stereotyping at the work place can lead to discriminatory behavior. We investigated whether observers spontaneously categorize people in age groups and if they misremember people as more stereotypical than they really were. In the who-said-what paradigm participants (employees in various companies) studied a group of old and young speakers make stereotypical and counterstereotypical statements about their work. In Experiment 1 speakers made equal numbers of each type, in Experiment 2 they made more counterstereotypical than stereotypical statements. Afterwards, memory for the statement and speaker showed that statements were more likely attributed to a person from the same group as the original speaker than from the other age group, replicating earlier findings. This effect was larger when the statement fit the stereotype. Multinomial tree model fits indicated that stereotypicality did not affect memory for statement, speaker, or speaker category. However, in Experiment 1 participants were more likely to guess the correct category for stereotypical than counterstereotypical statements. In Experiment 2 they were more likely to guess the correct category for counterstereotypical than stereotypical statements. We conclude that stereotypes are used when memory fails.

Speaker	Pestilli, Franco
Author 1	McPherson, Brent Indiana University
Author 2	Pestilli, Franco Indiana University
Title	Human age is predicted by a linear covariation of brain network and behavioral factors
Abstract	Historically results from human behavior have demonstrated that performance improves in a variety of tasks early in life, peaks between the 20's and 40's and decreases thereafter. At the same time, several measures of brain network connectivity have also been shown to similarly increase in the early years of life, to peak for young adults and to decrease in older adults. We employed a multivariate approach to relate measures of performance from over 300 behavioral tasks with over 200 measures of brain network

connectivity from over 630 individuals' across the lifespan – 10-85 years. We found that a single dimension of covariation strongly associates ($r=0.88$) measures of performance in five behavioral domains (perceptual, cognitive, emotional and motor factors) with the structural connectivity of individual human brain networks. Importantly, we demonstrate that this single dimension of covariation well predicts the held-out age of the human individuals in the sample ($r: 0.66$). These results demonstrate that human aging is associated with the synchronous change of both brain networks and behavior.

Speaker	Plancher, Gaën
Author 1	Plancher, Gaën University of Lyon
Author 2	Harding, Sam Indiana University
Author 3	Kumar, Kiran Indiana University
Author 4	Chandramouli, Suyog Indiana University
Author 5	Shiffrin, Richard Indiana University
Title	On maintenance of continuous representation
Abstract	Working memory performance for categorical items such as letters is a linear function of the cognitive load of a concurrent task, giving evidence that memory traces are maintained through attentional refreshing. The present study tested the effect of a concurrent load upon precision of memory for colors. Participants were asked to remember a series of three colors presented sequentially on a screen, each color was followed by three digits to be categorised. The cognitive load of the concurrent task was manipulated by varying the pace of digits presentation. At the end of the trial on a color wheel, participants were required to provide sequentially their best guess about the three colors they remembered, but also to provide a confident interval around their guesses. The same experiment was also conducted under articulatory suppression. Cognitive load affected the distance of the point estimate of color to the correct color, but not the width of the confidence interval, except for the third color. Articulatory suppression decreased memory performance and confidence and this effect did not interact with cognitive load. These findings suggested that continuous representation can be maintained through attentional refreshing.

Speaker	Popov, Vencislav
Author 1	Popov, Vencislav

	Carnegie Mellon University
Author 2	So, Matt Carnegie Mellon University
Author 3	Reder, Lynne Carnegie Mellon University
Title	Word frequency affects binding probability not memory precision
Abstract	There is a mixed literature on whether high- or low-frequency words provide better cues for recalling episodic information. Across three immediate continuous source recall experiments we varied word frequency, presentation rate and whether the lists were of pure or mixed word frequency. In each experiment, on each of 300 trials, five words were presented sequentially in different locations on an invisible circle. On each trial, participants were probed with one of the words at random in the middle of the screen and they had to click on the associated location. A mixture model dissociated memory precision, binding failure and guessing rates from the distribution of degree of errors. In pure lists, low-frequency words lead to a greater degree of error in recalling the associated location and this was due to an increased failure in binding the word to the correct location and not due to differences in memory precision or guessing rates. Slowing down presentation rate eliminated the high-frequency advantage by reducing binding failures for low-frequency words. Mixing frequencies in a single list hurt high frequency and helped low frequency words, but list composition and presentation rate did not interact with each other. Finally, source recall was better when the probe word was preceded by a high-frequency word during study, but this effect appeared only with the fastest presentation rates. These findings support the idea that low-frequency words require more working memory resources for binding and that binding fails when these resources are insufficient.

Speaker	ratcliff, roger
Author 1	Ratcliff, Roger OSU
Author 2	Mckoon, Gail osu
Title	Modeling Response Signal Functions and Collapsing Bounds
Abstract	We manipulated lag time for a response-signal task and bias toward "old" or "new" responses for two recognition memory experiments. We fit response proportion data for "old" and "new" responses to a diffusion model. In that model, responses at a lag are based on processes that have terminated prior to the lag time and processes that have not, for which responses are generated by guessing. Because we have a bias manipulation, we can examine the evolution of ROC functions over time. The fit of the model to response proportions for "old" and "new" test items and the effects of the lag

and bias manipulations were excellent, with bias effects modeled by changes in the starting point of the decision process and guessing probability. The slope of the z-ROC function decreased with response-signal lag and it was a function of the difference in trial-to-trial variability in drift rate between "old" and "new" items. Remarkably, the diffusion model parameters were identifiable for this experimental design. We discuss implications of modeling response-signal data for collapsing bound and urgency signal models and we show some data (time permitting) for conditional accuracy functions, on which these latter models are based.

Speaker	Shiffrin, Richard
Author 1	Shiffrin, Richard Indiana University
Title	An algorithm for virtual and actual bargaining between two selfish agents
Abstract	Starting in about 2003 (see: Shiffrin, R. M. (2003). Locally rational decision-making. Behavioral and Brain Sciences, 26: 175-175) I developed a general algorithm for optimal decision making by two selfish agents who play one sequential decision game without discussion, but who reason alike, and thereby end up cooperating to a surprising degree. The algorithm applies to arbitrarily large sequential decision trees, and gives 'better' solutions than Nash equilibria. The same algorithm provides a baseline normative solution for two selfish agents who bargain to reach a binding contract for a given sequential decision tree. I present the algorithm and discuss some recent extensions to multiple games and learning of optimal policies.

Speaker	Sloutsky, Vladimir
Author 1	Sloutsky, Vladimir The Ohio State University
Author 2	Savic, Olivera The Ohio State University
Author 3	Unger, Layla The Ohio State University
Title	Co-occurrence statistics, taxonomic organization, and semantic development
Abstract	Our previous theoretical work suggested that taxonomic semantic organization may emerge from co-occurrence statistics present in linguistic input. For example, if the words "furry-cat" reliably co-occur and so do words "furry-dog", then these first-order links may give rise to second-order links between words "cat-dog" that rarely co-occur. According to this account, (1) co-occurrence-based semantic organization should emerge prior to taxonomy-based semantic

organization and (2) the later should not replace the former. In this talk, we present experiments using cued recall and label verification to examine (1) and (2). We then present experiments using label extension and priming to demonstrate that second order links may emerge online from the newly learned first-order ones.

Speaker	Sperling, George
Author 1	Sperling, George University of California, Irvine; Department of Cognitive Sciences
Author 2	Sun, Peng University of California, Irvine; Department of Cognitive Sciences
Title	Deriving and applying a theory of how visual motion-direction is perceived.
Abstract	Based on prior work, we know that at an early stage the visual system has three different systems that independently extract visual motion information from visual inputs. At later stages, these systems combine their outputs. Here, we consider a much studied (>650 publications) class of visual stimuli, plaids, which are combinations of two sine waves. Currently, there is no quantitative theory to explain the perceived motion of plaids. With an important methodological improvement, we obtained a large set of data exploring the various dimensions in which plaids differ. We found that only two of the three motion systems are active in plaid processing. With this clue, we were able to formulate a pure theory for the outputs of the first-order and third-order motion systems and how they combine. With zero parameters estimated from the data, the theory captures the essence of the full range of our plaid data and supports some surprising, counter-intuitive conjectures about how vision works. For more info, visit http://www.cogsci.uci.edu/~whipl/ -->Sperling -->Publications -->Plaids

Speaker	Wagenmakers, Eric-Jan
Author 1	Wagenmakers, Eric-Jan University of Amsterdam
Title	A Bayesian Perspective on the Difference Between Prediction and Accommodation
Abstract	It has recently been argued that hypothesis-testing research should use preregistration, a procedure that allows a strict separation between predictions and postdictions (also known as accommodations). The intuitive idea is that, when a prediction is confirmed, the underlying hypothesis has received more support than if that hypothesis was constructed to accommodate the data after the fact. But is our intuition faulty? Some Bayesians have argued that the distinction is illusory, and that it arises because

models that are constructed after the fact usually have low plausibility. After summarizing the considerable literature on the topic, I will end up arguing that Bayesians have no need for methods such as preregistration, but only if they are completely honest (i.e., they are saints) and able to take into account an infinity of hypotheses (i.e., they are robots). So although preregistration may justifiably be scoffed at by Bayesian robot-saints (or Bayesian philosophers), human researchers will find some benefit in preregistration, even when they are Bayesian.

Speaker	Weichselgartner, Erich
Author 1	Weichselgartner, Erich Leibniz-Institute for Psychology Information
Title	Do Open Science practices improve research quality in psychology?
Abstract	<p>Most researchers in psychology are probably unaware of the deep and disconcerting crisis of the established practice of science. The crisis notably was launched in 2009 when John Ioannidis published his (in)famous paper "Why Most Published Research Findings Are False". In 2013, The Economist devoted an entire issue to "unreliable research". And in 2014, The Lancet presented a series of five papers written partly by Nobel laureates with the overall headline Research: increasing value, reducing waste. Psychology eventually was stirred up when the Open Science Collaboration (OSC) published their paper Estimating the Reproducibility of Psychological Science in 2015. The message of all these papers is that findings are not as resilient as they should be, especially considering the huge amount of money spent on research. "Modern scientists are doing too much trusting and not enough verifying" The Economist wrote. Private sector companies report that they don't trust academic research. For example, the biopharmaceutical company Amgen found they could reproduce just six of 53 "landmark" studies in cancer research. This so-called crisis has not only alarmed concerned researchers, but also publishers, policy makers and funders. In psychology, quite some controversy arose regarding the interpretation of the OSC findings and the value of replication studies. Others however, right away deemed psychological science to be in a deep methodological crisis (e.g., Chris Chambers: "The 7 Deadly Sins of Psychology", 2017). Apart from the discussions on how to perform research, there are discussions on how to report and to evaluate research. My talk will focus on the latter aspects, i.e. recent developments in scholarly communication and Open Science.</p>

Speaker	Wills, Andy
Author 1	Wills, Andy Plymouth University, UK
Title	Benchmark phenomena in category learning

Abstract	Following some arguments I've made in previous work (Wills & Pothos, 2012; Wills et al., 2017), and a recent proof of concept in another field (working memory; Oberauer et al., 2018), I'll discuss possibilities and progress to date on establishing a set of benchmark phenomena for category learning. One key reason for benchmark phenomena is to provide a strong base against which to test the relative adequacy of formal models.
-----------------	--

Speaker	Yu, Chen
Author 1	Yu, Chen Indiana University
Title	Examining Statistical Learning Mechanisms from the Infant's Perspective
Abstract	In this talk, I will review a set of recent studies in my lab using egocentric video collected from head-mounted eye tracking systems to examine early visual object learning and early word learning. The two primary research goals are to quantify statistical regularities in the real world and to understand underlying learning mechanisms operated on statistical data. Toward the first goal, we collected a corpus of infant-perspective visual scenes and as well as infant gaze data as they play with their parent in a cluttered toy room and as parents naturally name the toys. We analyzed visual properties of infant-perspective scenes and quantified the ambiguity/transparency of individual parent naming events using infant gaze. Toward the second goal, we used the corpus of scenes that co-occur with parent naming to construct experiments which are composed of different mixes of high and low ambiguity naming events, with ambiguity defined by the looking behavior of the infants. Infants were trained and tested in multiple experimental conditions, varying in terms of the ambiguity of training trials and also in the composition and order of those trials to test specific hypotheses about learning mechanisms. We also tried to predict individual infants' learning outcomes by feeding infants' trial-by-trial looking behavior as input to statistical learning models, using the ability to predict each infant's final learning as a way to reveal the underlying processes that support learning.

Speaker	Zeelenberg, Rene
Author 1	Zeelenberg, Rene Erasmus University Rotterdam
Author 2	Pecher, Diane Erasmus University Rotterdam
Author 3	Ferrand, Ludovic CNRS
Title	Stroop Effects and Response Discrimination

Abstract

The Simon effect is eliminated in a go/no-go variant of the task in which participants respond to only one color and withhold a response to another color. Similar findings have been found for related effects such as the object-based alignment effect and grasp compatibility effect. These findings indicate that the Simon effect and related effects are present only when participants need to discriminate between different response alternatives. In a series of experiments we tested the hypothesis that the Stroop effect would still be present even when participants do not need to discriminate between different alternative responses.

Contact **with questions.**