

***Understanding Human Time Workshop***  
**9-10 April 2021**  
 via Zoom

To register contact the workshop organizer, Kasia M. Jaszczolt, on [kmj21@cam.ac.uk](mailto:kmj21@cam.ac.uk), by **6 April 2021**.

***Programme***

Times are given in BST (GMT + 1 hour)

**Friday 9 April**

- 14.00-14.40 Tense and emotion  
*Simon Prosser*, University of St Andrews
- 14.40-15.20 “*Time stays, we go*”: An exploration into the poetics of time  
*Anna Piata*, Université de Neuchâtel
- 15.20-15.30 break
- 15.30-16.10 Perceiving direction in directionless time  
*Matt Farr*, University of Cambridge
- 16.10-16.50 The 2D past  
*Graeme A. Forbes*, University of Kent
- 16.50-17.00 break
- 17.00-17.40 Temporal remoteness in a tenseless language  
*Jürgen Bohnemeyer*, University at Buffalo

**Saturday 10 April**

- 14.00-14.40 Avertive/frustrative markers in Australian languages: Blurring the boundaries between temporal and modal meanings  
*Patrick Caudal*, CNRS & Université Paris-Diderot
- 14.40-15.20 Temporal transparency and the flow of time  
*Giuliano Torrenço*, University of Milan/Autonomous University of Barcelona
- 15.20-15.30 break
- 15.30-16.10 Does human time really flow? Metaindexicality, metarepresentation, and basic concepts  
*Kasia M. Jaszczolt*, University of Cambridge
- 16.10-16.50 Temporal modelling and Ontological Hindsight Bias  
*Joshua Mozerky*, Queen’s University, Kingston, Ontario
- 16.50-17.00 break

17.00-17.40 Temporal semantics and grammar in Pirahã  
*Daniel L. Everett*, Bentley University

c. 17.45-18.15 General discussion and informal close

## ***Abstracts***

### **Jürgen Bohnemeyer, University at Buffalo**

Temporal remoteness markers in a tenseless language

This paper advances an analysis of Yucatec (Mayan; Mexico and Belize) temporal remoteness markers (TRMs), building on the informal discussion in Bohnemeyer (2002, 2009). Yucatec has five such markers, labeled ‘immediate/recent/remote past’ and ‘immediate/remote future’ in Bohnemeyer (2009). The traditional conceptualization of TRMs in the typological literature (Comrie 1985; Dahl 1985) has treated such functional morphemes as semantically specific tenses that subdivide the semantic categories expressed by English-style tenses according to a metric of distance/remoteness from utterance time. Couched in the framework of Klein (1994), this would mean that they express (i) an ordering relation between utterance time and topic time and (ii) a quantification of the distance between utterance time and topic time. Recent studies on the TRMs of two Northeastern Bantu languages, Luganda (Great Lakes, Uganda; Klecha & Bochnak 2016) and Gĩkũyũ (Kikuyu-Kamba, Kenya; Cable 2013), cast doubt on the validity of this generalization. Klecha & Bochnak show that Luganda TRMs have weakly indexical evaluation times that can be interpreted both deictically, i.e., as utterance times, and anaphorically, i.e., as reference times given in the discourse context. And Cable (2013) argues that Gĩkũyũ TRMs quantify, not the distance between utterance time and topic time, but rather that between utterance time and the event time.

The semantics of Yucatec TRMs approximates a combination of the features proposed in these studies. Like those of Luganda TRMs, they are not restricted to deictic reference. And like Gĩkũyũ TRMs, their Yucatec counterparts access the event time, which on a tenseless analysis of Yucatec, as argued for in Bohnemeyer (2002, 2009), they relate directly to topic time, not to an evaluation time. As such - establishing a relation between event time and topic time - Yucatec TRMs are semantically more similar to viewpoint aspects than to tenses in a Kleinian framework. Yucatec provides new data points reinforcing the typological variability of TRMs, especially as concerns non-tense-like properties. This should not be construed as implying that true remoteness tenses in the sense of Dahl (1985) and Comrie (1985) do not exist.

Bohnemeyer, J. (2002). *The grammar of time reference in Yucatek Maya*. Munich: LINCOM.

Bohnemeyer, J. (2009). Temporal anaphora in a tenseless language. In W. Klein & P. Li (Eds.), *The expression of time in language*. Berlin: Mouton de Gruyter. 83-128.

Cable, S. (2013). Beyond the past, present, and future: towards the semantics of ‘graded tense’ in Gĩkũyũ. *Natural Language Semantics* 21: 219-276.

Comrie, B. (1985). *Tense*. Cambridge: Cambridge University Press.

Dahl, Ö. (1985). *Tense and aspect systems*. Oxford: Blackwell.

Klecha, P. & R. Bochnak (2016). Temporal remoteness and relativity. In C. Hammerly & B. Prickett (eds.), *Proceedings of NELS 46*. 213–226.

Klein, W. (1994). *Time in language*. London: Routledge.

### **Patrick Caudal, CNRS & Université Paris-Diderot**

Avertive/frustrative markers in Australian languages: Blurring the boundaries between temporal and modal meanings

So-called ‘avertive’ or ‘frustrative’ inflectional markers were (to the best of my knowledge) first identified in Australian languages, notably in Rembarnga (non-PamaNyungan/Maningrida) (McKay 1975) for and for Iwaidja (non-Pama-Nyungan/Iwaidjan); their meaning can be best paraphrased as ‘I nearly V-ed/was going to V-ed [but didn’t]’, cf. (1).

- (1)      maju                      ngan-ambija-na  
           WANT.Part            1sg.FRUST-laugh-FRUST  
           ‘I was going to laugh (but I didn’t)’ (Iwaidja; (Pym & Larrimore 1979: 76))

Amazonian languages have been diagnosed as another major linguistic area where grammatical avertive/frustrative markers are abundant, cf. e.g. (Aikhenvald 2012: 185); (Overall 2017) formulated the first in-depth, areal-typological study of such markers in Amazonia. And while (Kuteva 1998; Kuteva et al. 2015) formulated a foundational account of avertives/frustratives in terms of grammaticalization theory, and offered wider typological glimpses into the actual extent of the category, the study of avertive/frustrative markers is still in its infancy. Indeed, it seems to be just as widespread across languages of the world as other recently uncovered categories, such as e.g. evidentiality, and is far from being well described (let alone understood) at the present time.

This talk will offer an initial areal-typological account of the complex semantics of avertive/frustrative markers in Australia, beginning with a description of Iwaidja and Anindilyakwa (non-Pama-Nyungan/Gunwinyguan) avertives/frustratives, followed by a short typological study of similar markers in a sample of non-Pama-Nyungan languages. What renders Australian avertives/frustratives unique and especially worthy of consideration is their striking polyfunctionality, cf. (2), as they are used to convey a variety of meanings comprising:

- negative past events
- positive or negative past modals (esp. deontic/volitional) and
- positive or negative past imperfective meanings (progressive and/or prospective)

- (2)      karlu      ayana-wu-ni    (iwaidja)  
           neg      1sg>3pl.FRUST-hit-FRUST (TAIM20181114DY@00:04:11)  
           1. ‘I didn’t hit them.’  
           2. ‘I should not have hit them’.  
           3. ‘I wasn’t going to hit them’.

Such recurrent polysemous patterns suggest that Australian avertive/frustrative markers can be regarded as endowed with a typologically unusual ability to blur boundaries between modal and temporal meanings, thus constituting a manner of temporo-modal ‘platypus’. I will speculate that this might be an indication that our understanding of the flow of time can be cognitively and socially far richer than suggested by facts derived from, or theories of time based on ‘Standard Average European’ languages (in the Whorfian sense, see (Haspelmath 2001)). In particular, this striking areal property of non-Pama-Nyungan languages suggest that the linguistic construal of time could be primarily envisioned as a socially connected structure, rife with disappointments and failures connecting speakers and addressees, effectively driven by shared or interpersonal representations of expectations (including those of other people), plans and desires, rather than mere causo-temporal ordering (even if it is subjectively reconstructed via e.g. deixis-related mechanisms), and therefore potentially overlapping with modality in significant ways: in other words, that time in language could be interactional in a rich social sense.

Aikhenvald, Alexandra Y. 2012. *The Languages of the Amazon*. Oxford: Oxford University Press.

Haspelmath, Martin. 2001. The European linguistic area: Standard Average European. In Martin Haspelmath, Ekkehard König, Wulf Oesterreicher & Wolfgang Dressler (eds.), *Language Typology and Language Universals / Sprachtypologie und sprachliche Universalien / La typologie des langues et les universaux linguistiques*. Volume 2, 1492– 1510. Berlin: Walter de Gruyter.

Kuteva, Tania A. 1998. On Identifying an Evasive Gram: Action Narrowly Averted. *Studies in Language* 22(1). 113–160. doi:10.1075/sl.22.1.05kut.

Kuteva, Tania, Bas Aarts, Gergana Popova & Anvita Abbi. 2015. On five counter-to-fact grammatical categories. Presented at the Conference "Diversity Linguistics - Retrospect and Prospect, Max-Planck-Gesellschaft, Leipzig.

- McKay, Graham Richard. 1975. Rembarnga : a language of central Arnhem Land. Canberra: Australian National University Ph.D.
- Overall, Simon E. 2017. A Typology of Frustrative Marking in Amazonian Languages. In Alexandra Y. Aikhenvald & R. M. W. Dixon (eds.), *The Cambridge Handbook of Linguistic Typology*, 477–512. Cambridge: Cambridge University Press.
- Pym, Noreen & Bonnie Larrimore. 1979. Papers on Iwaidja Phonology and Grammar (Work Papers SIL-AAB, Series A). Darwin: Summer Institute of Linguistics.

### **Daniel L. Everett, Bentley University**

Temporal semantics and grammar in Pirahã

In this talk I offer an analysis of time, aspect, and their manifestations in the grammar and semantics of Pirahã. Although there is a rich system of verbal aspectual suffixation in the language, there is no purely temporal morphology. There is also a very limited number of time words. At the same time, the Pirahãs do know about the past and the future, as opposed to the present, though they have culturally-imposed restrictions on how these can be talked about. This mismatch between Pirahã temporal grammar and semantics is reflected elsewhere in the language, as in their discrimination of colors without naming them and their recursive thought without recursive grammar. Taken together, these facts argue strongly for a cultural semeiotics that weaves grammar, culture, and meaning together in ways important to the further understanding of human cognition.

### **Matt Farr, University of Cambridge**

Perceiving direction in directionless time

There are several motivations for holding time to lack a direction. But how does a temporally adirectional metaphysics, or ‘C-theory’ of time, fit with the time of experience? In this paper, I look at what kind of problem human time poses for C-theories. First, I ask whether there is a ‘hard problem’ of human time: whether it is in principle impossible to have the kinds of experience we do in a temporally adirectional world. I argue that this poses no serious problem for the C-theorist. Second, I consider the ‘easy problem’: how specific directed aspects of our temporal experience are to be explained by a C-theorist. This leads to a greater issue: is there such a thing as an experience of time direction at all to even be explained? I argue that the kinds of experience we have that we typically associate with the idea of time being directed are best represented and understood in terms of a directionless picture of time.

### **Graeme A. Forbes, University of Kent**

The 2D past

When we translate English sentences into tense logic, we often, to preserve sense, need to retain a past-tensed predicate. So ‘Dave has walked’ becomes ‘WAS Dave walked’, rather than ‘WAS Dave walks’, or ‘WAS Dave is walking’, where the sentential operator ‘WAS’ serves merely to restrict the scope of the sentence to times earlier than now. I will build on previous work in Briggs and Forbes (2012; 2019); Forbes (2016); Forbes and Wildman (MS) to show how a two-dimensional framework (as used by e.g. Stalnaker 2004) can make sense of the relationship between a past-tensed predicate, and the present-continuous predicate that used to apply (e.g. ‘is walking’). I will argue that such a framework allows us to make sense of the ways in which the past is intrinsically the same as when it was present, but also extrinsically different, due to the change in modal status that some event undergoes by becoming past. I will then use this framework to examine two difficult cases: one where what’s true of the past changes retrospectively because of extrinsic properties (e.g. ‘Armstrong won the *Tour de France*’ becomes false and ‘Armstrong never won the *Tour de France*’ becomes true), and the other where, because of changes in meanings, sentences change from being analytically true to being false (e.g. cheese is non-vegan). My treatment of difficult cases will

preserve the claim that the past is intrinsically the same as when it was present, but use a change from potentiality to actuality to explain cases where it seems that the past has changed by becoming past.

**Kasia M. Jaszczolt, University of Cambridge**

Does human time really flow? Metaindexicality, metarepresentation, and basic concepts

I bring together discussions about the metaphysics of time and the passage of time with the linguistic discussions on the concept of time to address the question of why time appears dynamic. First, I explore the question of indexicality of time vis-à-vis the indexicality of the first-person perspective, proposing what I call the ‘metaindexicality’ of time that explains the apparent dynamicity. On my account, apparently dynamic human time is essentially static. I argue that human time is a complex concept. When brought down to the level of conceptual building blocks, time does not flow. It only flows on the level of their culture- and language-specific combinations – an account that fits with the neo-Whorfian analysis. A further argument comes from the so-called semi-propositional, metarepresentational character of the concept of time: arguably, time as understood in modern physics of spacetime percolates to common knowledge but only as semi-understood, semi-propositional (Sperber), representational beliefs. This semi-propositional character, paired with the metaindexical account of human time, can explain the apparent flow.

**Joshua Mozersky, Queen's University, Kingston, Ontario**

Temporal modelling and Ontological Hindsight Bias

Concerning the ontological status of the future, one question to address is how we might go about modelling a region that is outside experience. In so doing, we must consider what the constraints on such a model should be. In what follows, I propose two such constraints that are, I argue, difficult to deny. I then argue that these two simple constraints are in fact surprisingly powerful because they rule out some well-known, intuitive, and appealing models of time, in particular the branching future theory of time (see Belnap et al. 2001, McCall 1994, MacFarlane 2003, Thomason 1970). The upshot of these arguments is that the ontology defended by the tenseless, B-theory of time is comparatively strong.

**Anna Piata, University of Neuchâtel**

*“Time stays, we go”*: An exploration into the poetics of time

Can the poetics of time illuminate our understanding of time? This is the central question that this talk will address. This endeavour is motivated by the assumption that the expression of time finds fertile ground in the discourse domain of poetry: while time is notoriously known to be ineffable (since it cannot be directly perceived through our senses), poetry allows for expressing how people *feel* the passage of time and, not least, about time. It aims to show that, while subverting how we conventionally speak about time, verbal creativity offers a window to the psychologically real experience of time, which may diverge significantly from social norms regarding temporality; as Henry Austin Dobson puts it in his poem “The Paradox of Time”: *“Time goes, you say? Ah no!/ Alas, Time stays, we go”*. Such a distortion of temporal norms includes the feeling of time as speeding up or slowing down (or as freezing); blurring the boundaries between the past and the future; unsettling the linear sequence of events; and recalling events in subjective ways (e.g., an event long gone as being close to the present). Thus, the poetics of time brings to the limelight different manifestations of temporal distortion, which boil down to what can generically be referred to as ‘subjective time’ and in which emotion is shown to play a key role. This approach presents itself with benefits, as well as challenges: it promises to shed some light on the phenomenology of time while at the same time positing a challenge to linguistic approaches to time, which have largely overlooked time as a psychologically real experience. In the last part, the talk will attempt to connect the dots and explore the possibility of an integrative approach to time that will combine linguistics, psychology, and the affective sciences.

## **Simon Prosser, University of St Andrews**

### Tense and emotion

Arthur Prior (1959) raised the question of why we should say ‘thank goodness’ when a bad event is in the past, and not when it is in the future. This was long regarded as a challenge for advocates of ‘tenseless’ views of time (i.e. the ‘B-theory’ of time), though these days it is fairly standardly replied that this is just an example of the phenomenon of the ‘essential indexical’ (Perry 1979), wherein attitudes expressed using words like ‘I’, ‘here’ and ‘now’ have a special psychological role not captured by their non-indexical counterparts. More recently, some scepticism has been expressed about doctrine of the essential indexical and the supposedly special role of the first-person perspective (see specially Millikan 1990, Cappelen and Dever 2013, Magidor 2015). Much of this has focussed on the explanation of actions. Here I shall focus on Prior’s example, which suggests that tensed attitudes are essential for certain emotional responses to be appropriate. I shall suggest an explanation for this in terms of a notion that I call *first-person redundancy*. This allows me to kill two birds with one stone: it explains what is going on in Prior’s example without recourse to a tensed metaphysics of time, and also provides part of a response to sceptics about the special psychological role of expressions like *past* and *over*.

## **Giuliano Torrengo, University of Milan/Autonomous University of Barcelona**

### Temporal transparency and the flow of time

Temporal transparency is the thesis that our experiences do not reveal phenomenally their own temporal properties. I will argue that transparency holds at least for duration and temporal location. An aspect of our experience of time passing is that we always “find ourselves” in a different moment, and that we feel that there is something ineluctable in that. In this talk, I will bring together these two ideas, elaborating on my phenomenal modifier account of the experience of the passage of time.