



CON AMORE

Center on Autobiographical
Memory Research

THEORETICAL PERSPECTIVES ON AUTOBIOGRAPHICAL MEMORY

JUNE 13th - 16th 2010

AARHUS UNIVERSITY,
DENMARK



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Research Foundation



CON AMORE
Center on Autobiographical
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WELCOME



A quarter of a century ago, the autobiographical memory field was small and exotic. In the middle of the 1980's, a total of roughly 20 journal articles had been published on this topic. Today a similar literature search reveals a total of roughly 1600 published journal articles. Thus, the field has grown dramatically. It has demonstrated its significance

in numerous ways. It has shown a strong ability to establish clear empirical generalizations which would not have been established through traditional laboratory experiments with neutral verbal materials. It has shown its practical relevance by deepening our understanding of several clinical disorders, and by demonstrating to the legal system the possibility of inducing false memories. It has become an important topic for brain studies, and thus helped to enlarge our general understanding of the brain.

The time is now ready for reviewing and integrating the many theories, perspectives and approaches that have evolved over the last twenty-five years – for example, concerning the basic neural systems of autobiographical memory, its underlying cognitive structures, retrieval processes, how it develops in infancy and childhood, breaks down in aging and dementia, its social and cultural aspects and its relation to personality and the self. The central goal of this conference is to help to provide such overview and integration.

The conference also marks the opening of the Center ON Autobiographical MemOry REsearch (CON AMORE). This is a center of excellence supported by The Danish National Research Foundation and hosted by Aarhus University for a five year period beginning January 2010.

Our goal is to develop a center which tries to integrate many different aspects of autobiographical memory research, including basic autobiographical memory research with adults, development of autobiographical memory from infancy through young adulthood to aging and dysfunctional aspects of autobiographical memory, such as in Posttraumatic Stress Disorder (PTSD) and amnesia. For more information, please visit our website:

<http://www.psy.au.dk/conamore>

Thank you for coming to Aarhus!

The organizing committee

Dorthe Berntsen
Annette Bohn
Dorthe Kirkegaard Thomsen
Jette Odgaard Villemoes
Lone Hansen

ABOUT THE PROGRAM



The conference program consists of 15 keynote presentations and two poster sessions. Each keynote presentation reviews and discusses findings in a particular area of autobiographical memory research. The keynote talks cover a variety of topics such as different approaches to the study of autobiographical memory, development of autobiographical memory from infancy to old age, brain studies of autobiographical memory, social and collective aspects of autobiographical memory as well as evolution and basic processes of autobiographical memory. A 60 minute time slot is scheduled for each keynote presentation, including 15-20 minutes for discussion. Keynote presenters are kindly asked to leave time for discussion.

Poster sessions

Poster sessions are scheduled after lunch Monday and Tuesday in **AULA**. There will be coffee and tea available during the poster sessions in the adjoining **Vandrehallen**. Each poster session is scheduled for 1.5 hours to allow plenty of time to look at the posters and talk to the presenters. Poster presenters are expected to be present at their poster during the scheduled session. The posters can be displayed from morning to evening during the day of their session. For presenters: Please note that the max size of your poster is: *height 120 cm *and *width: 150 cm*.

THEORETICAL PERSPECTIVES ON AUTOBIOGRAPHICAL MEMORY

Timetable

Sunday June 13	15.30	Vandrehallen	Registration opens
	17.30 – 18.30	Aula	Opening speech: Alan Baddeley
	18.30 – 19.00	Aula	Opening speech: Klaus Bock
	19.00 – 21.00	Antique Museum	Opening Buffet
Monday June 14	09.00 – 09.30	Aula	Welcome: Dorthe Berntsen
	09.30 – 10.30	Aula	Keynote speech: Morris Moscovitch
	10.30 – 11.30	Aula	Keynote speech: Roberto Cabeza
	11.30 – 12.00	Vandrehallen	Coffee break
	12.00 – 13.00	Aula	Keynote speech: David C. Rubin
	13.00 – 14.00	Stakladen	Lunch
	14.00 – 15.30	Aula/Vandrehallen	Postersession 1 and coffee
	15.30 – 16.30	Aula	Keynote speech: Merlin Donald
	16.30 – 17.00	Aula	Welcome to AU: Rector Lauritz B. Holm-Nielsen
	17.00 – 17.30	Vandrehallen	Refreshments
19.00 – 20.00	City Hall	Welcome to Aarhus Reception	
Tuesday June 15	09.00 – 10.00	Aula	Keynote speech: Patricia Bauer
	10.00 – 11.00	Aula	Keynote speech: Robyn Fivush
	11.00 – 11.30	Vandrehallen	Coffee break
	11.30 – 12.30	Aula	Keynote speech: Joseph Fitzgerald
	12.30 – 13.30	Stakladen	Lunch
	13.30 – 15.00	Aula/Vandrehallen	Postersession 2 and coffee
	15.00 – 16.00	Aula	Keynote speech: Arnaud D'argembeau
	16.00 – 17.00	Aula	Keynote speech: Dorthe Berntsen
	17.00 – 18.00	Vandrehallen	Possibility of Tour de Center
	19.00 – 22.00	Samfundsfagenes kantine	Conference dinner
Wednesday June 16	09.00 – 10.00	Aula	Keynote speech: Martin A. Conway
	10.00 – 11.00	Aula	Keynote speech: Tilmann Habermas
	11.00 – 11.30	Vandrehallen	Coffee break
	11.30 – 12.30	Aula	Keynote speech: Norman Brown
	12.30 – 13.30	Stakladen	Lunch
	13.30 – 14.30	Aula	Keynote speech: William Hirst
	14.30 – 15.00	Vandrehallen	Coffee break
	15.00 – 16.00	Aula	Keynote speech: David Pillemer
	16.00 – 17.00	Aula	Panel Discussion, chair: David Rubin

KEYNOTE PRESENTATIONS



Alan Baddeley,
University of York
**Reflections on the study of
autobiographical memory**

The study of autobiographical memory by cognitive psychologists began about 25 years ago. Since that time it has grown considerably in both range of application and popularity, but as someone returning to view the field after several years absence, it is less clear that it has developed theoretically to the same extent. Is this the case? And if so, why, and what can we do about it?



Roberto Cabeza, Duke University
Functional Neuroimaging of Autobiographical Memory
(Roberto Cabeza and Peggy St. Jacques, Duke University)

Functional neuroimaging studies of autobiographical memory (AM) have grown dramatically during the last few years. These studies are important for several reasons. First, AM studies achieve greater ecological validity than studies using simple laboratory stimuli, such as words or pictures. For example, they demonstrate the contributions of self-referential processing and associated medial prefrontal regions to remembering personal past events. Second, they allow the investigation of longer retention periods, which is important for examining memory consolidation and reconstructive memory processes. For instance, they allow the study of how different prefrontal regions contribute to ordering past events in time. Third, AM studies are useful for investigating the interaction between memory, sensory, and emotion systems. For example, they have shown that vivid memories recruit imagery processes in visual cortex whereas emotional memories engage arousal processes in the amygdala. Finally, AM studies are ideal for investigating the roles of episodic and semantic memory during memory reconstruction. For instance, they have shown that the contribution of episodic memory, as revealed by the reliving experience, is directly linked to the strength of hippocampal activations. In sum, functional neuroimaging studies of AM complement laboratory-stimuli studies by enhancing ecological validity, expanding retention intervals, assessing the role of sensory and emotion processes, and revealing the contributions of episodic vs. semantic memory.



Morris Moscovitch,
University of Toronto
**Memory consolidation past
and present: The contribu-
tion of research on autobio-
graphical memory**

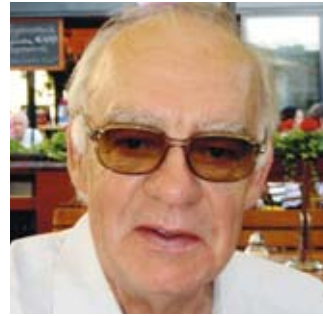
The idea that older memories are more resilient than recent ones is one of the oldest in psychology. The modern version of this idea states that episodic memories are initially represented by ensembles of hippocampal-neocortical neurons. Over time, memories are consolidated in neocortex, where they can be represented and retrieved independently of the hippocampus. Research on autobiographical memory, which is a type of episodic memory, has challenged the notion that the role of the hippocampus is time limited. Indeed, in the extreme, it has even undermined the notion that long-term (systems) consolidation is a viable concept. Instead, research on humans and non-humans suggests that rather than being consolidated, some memories are transformed, and it is the character of the newly-transformed memory that determines the brain regions that represent it.



Patricia Bauer, Emory University

The life I once remembered: The waxing and waning of early memories

Adults experience a paucity of memories from infancy and early childhood. This childhood amnesia contributed to the impression that infants and young children lacked the ability to remember the experiences of their lives. The development of nonverbal tests of memory led to a revision of this perspective and a wealth of evidence that young children and even infants remember. Contemporary research into the multiple determinants of the development of memory, from the brain structures that make remembering possible to the social context of remembering, has advanced our understanding of how memory develops in children and has pulled back the veil on the mystery of childhood amnesia among adults. This talk will feature new retrospective and prospective data that reveal differences in the patterns of remembering and forgetting of events experienced at different points in childhood, thereby allowing observation of the development of childhood amnesia. It also will include behavioral and neuroimaging data (event-related potentials, fMRI) that inform the processes and determinants of developmental differences in episodic and autobiographical memory over the course of development.



Merlin Donald, Queen's University

Evolutionary origins of autobiographical memory: A review of key issues.

The storage and retrieval aspects of human memory have different evolutionary origins, with voluntary retrieval evolving late, and quite recently. Memory storage, including episodic recognition, seems similar in primates and humans, but voluntary memory search and retrieval is found only in humans. This core capacity may be called "autocuing," or the self-triggering of specific memories. Autocuing does not appear in our closest primate relatives, chimpanzees, and was thus probably absent in our common ancestor with them. It appears to have emerged in hominids in two stages. The first stage appeared in the form of a capacity for voluntarily rehearsing nonverbal skills, especially toolmaking skills. This capacity entails the creative pantomime of previous actions, towards their refinement -- mimesis -- and is contingent on voluntarily searching for, and retrieving, specific previous performances from memory. The second stage in the evolution of autocuing came with spoken language, during the last 400 thousand years, and appears to have been scaffolded on mimesis. The neural mechanism of autocuing appears to be supramodal, and linked to the mechanisms of voluntary movement.



Robyn Fivush, Emory University

Developing an autobiographical voice through family reminiscing

The stories we tell about ourselves define who we are for ourselves through time, and in relation to others. Through telling and sharing the stories of our lives, we create ever more coherent and meaningful life narratives. Intriguingly, this process begins early in development, during the preschool years, as parents and children first begin to share the past in reminiscing, and family reminiscing continues to be a critical context for the development of autobiographical narratives through adolescence. Moreover, this process is gendered such that mothers are more elaborative and more emotionally expressive during reminiscing than are fathers, and both parents are more elaborative and emotionally expressive when reminiscing with daughters compared to sons. Gender differences in children's autobiographical narratives emerge by the end of the preschool years, and are maintained throughout adolescence. Relations between family reminiscing and children's emerging autobiographical narratives indicate that children are developing an individual narrative style, or voice, through participating in family reminiscing, and autobiographical voice is linked to emerging identity throughout childhood and adolescence.



Dorte Berntsen, Aarhus University

In search of lost time: Involuntary and voluntary autobiographical remembering and the cultural structuring of time

Involuntary autobiographical memories are memories of personal experiences that come to mind spontaneously – i.e., with no preceding conscious attempt at retrieval. Such memories have been neglected in research on autobiographical memory. Most research has concentrated on memories retrieved voluntarily – i.e., in a deliberate and goal-directed fashion. I argue that involuntary memories are a basic mode of remembering that operates on the same episodic memory system as voluntary memories. Both involuntary and voluntary remembering involve mental time travel (i.e., the ability to mentally relive past events) both are universal, frequent and functional (although both can have dysfunctional side-effects). Because involuntary remembering is associative and requires less executive functions, it is likely to be evolutionarily earlier than the voluntary mode and to be present in many non-human species. The cultural structuring of subjective time, in terms of time technologies and cultural life scripts, supports both voluntary and involuntary remembering in humans and enables mental time travel over temporally longer distances than in other species.



Arnaud D'Argembeau,
University of Liège
**Autobiographical memory
and future thinking**

One of the main functions of autobiographical memory may be to retain information in order to anticipate and predict possible future events. Recent findings from various areas of psychology and neuroscience indicate that there is indeed an intimate relationship between the ability to remember past events and the ability to imagine future events. In this talk, I will review recent studies that have shown that constructing mental representations of possible future events relies on many of the same cognitive and neural processes as does remembering past events. I will then present some theoretical hypotheses regarding the nature and organization of knowledge structures that are used to represent future events. Finally, the importance of motivational factors in future thinking will also be addressed.



Joseph Fitzgerald, Wayne State University
**Lifespan Developmental Perspectives on Autobiographical
Memory and Narrative.**
(Joseph M. Fitzgerald and Clarissa Broadbridge, Wayne State
University, USA)

The lifespan perspective has guided research and theory concerning the development of human and nonhuman systems over the past 40 years. Several consistent themes have emerged over the years as central to that perspective: contextual modeling of individual and cohort development across the lifespan, multidirectionality and multidimensionality of developmental science, plasticity of development, and a focus on both intraindividual and interindividual development. We address several topics related to adult development and aging in a lifespan perspective. First, we review descriptive research on the relationship between age, cohort, and autobiographical memory including the sampling of memories associated with adolescence and early adulthood. Second, we will examine the impact of emotions and emotional development on autobiographical memory. Third, we will examine the role of emerging developmental neuroscience to account for changes in memory performance, especially the later years. Fourth, we will examine the rapidly growing field of narrative studies with a focus on the role of lifespan perspectives in the integration of autobiographical memory research and the study of narrative. Fifth, we discuss the value of the lifespan perspective for integrating the study of culture, autobiographical memory, life scripts, and perceived development. We conclude by outlining key research objectives for future research in the area of autobiographical memory development in adulthood.



Martin A. Conway,
University of Leeds
**Autobiographical Memory:
Consciousness, Culture, and
Evolution**

In this paper I first consider the nature of AM representations in long-term memory, including neural representations, and the functions these representations serve especially with reference to the self. Various types of conscious experience which these AM representations give rise to are then discussed. It is proposed that each individual exists in a 'remembering-imagining' window of consciousness that moves through time which is past-driven and future-oriented and which provides the mental context for conscious experiences of remembering. The review then turns to culture, notions of identity, and the integration of cultural knowledge with AM. Finally, some brief suggestions are made about the evolution of AM and particularly about which parts of the system might be species-general and which unique to humans.



David Pillemer, University of New Hampshire
**Directive Functions of Autobiographical Memory:
 A Reconceptualization**

(David Pillemer and Kie J. Kuwabara, University of New Hampshire)

Researchers have identified several overarching functions served by autobiographical memory: self, social and directive. In current theoretical models, definitions of these functional categories are overly broad and imprecise. In particular, analyses of the directive function lack focus. Proposed functions include using memories to solve specific problems, to make decisions, to learn from one's mistakes, to shape attitudes, to motivate behavior, to guide the pursuit of a life goal, and to predict the future. Directive functions can be defined and measured more precisely using dimensions that reflect several important dichotomies: aware versus unaware uses of memory; content specific versus content general effects; purposeful versus involuntary retrieval; and self-reported versus behavioral outcomes. New data illustrate the potential advantages of a more multi-faceted, precise and nuanced conceptualization of directive functions.



William Hirst,
 New School for Social Research
**Collective Memory: A collec-
 tive reflection of autobiogra-
 phical memory**

Autobiographical memories are individually held memories that shape individual identity, whereas collective memories are shared individually held memories that shape collective identity. This paper will explore how memory is designed in a manner that promotes the formation of collective memories, focusing on the role of social interaction. The concept of collective memory will be discussed and the role psychology can play in theorizing about collective memory will be explored. Socially shared forgetting will serve as a case study of the way psychological attributes of individual memory can promote the formation of collective memory.



David C. Rubin, Duke University
**The basic systems theory of
 autobiographical memory**

Unlike simple laboratory stimuli, autobiographical memories routinely involve visual, auditory, olfactory, spatial, linguistic, emotional, and narrative information. Behavioral, neuropsychological, and neuroimaging studies show that each of these forms of information is supported by a system with its own well-documented functions, neural substrates, processes, structures, and kinds of schemata. Understanding the process of constructing autobiographical memories requires the understanding the individual contributions of these systems. It also requires understanding the several ways the systems interact in their initial binding at encoding and in search and elaboration at retrieval. Behavioral, neuropsychological, and neuroimaging studies of undergraduates, older adults, and clinical populations will be used to illustrate the role of and effects of changes in functioning of the systems.



Norman Brown, University of Alberta

**Historical-defined Autobiographical Periods:
Their Origins and Implications**

(Norman R. Brown and Peter J. Lee, University of Alberta)

This talk will consist of three sections. First, we review evidence indicating that historically-significant public events sometimes create historical-defined autobiographical periods (H-DAPs), and we argue that this happens only when external events bring about wide-spread, profound and enduring changes in the fabric of daily life. The remaining sections address the implications of these claims. Specifically, in the second section, we focus on collective memory and consider the possibility that H-DAP formation predicts the intergenerational transmission of the precipitating events and that the absence of H-DAPs predicts the opposite. In the third section, we discuss the theoretical implications of this research for a general understanding of personal memory. In particular, we contend that autobiographical memory is organized in a way that reflects marked changes in the fabric of daily life (FoDL). Typically, these FoDL transitions occur at the level of the individual, but they can also occur at the level of the group. On this view, standard lifetime periods are associated with FoDL transitions at the individual level, and H-DAPs are associated with FoDL transitions at the group level.



Tilmann Habermas, Frankfurt University

Psychodynamic compared to cognitive concepts of AM

The main thesis of the psychoanalytic theory of memory is that failure and distortion in autobiographical memory retrieval may be non-consciously motivated. This thesis constitutes the dynamic concept of the unconscious. Other central assumptions are that motivated distortions regard mainly the time of remembering, not the original experience, that repressed or distorted memories tend to return involuntarily, and that a mental mechanism non-consciously checks memories for their compatibility with the current self view. Three aspects of psychodynamic theories that seem to differ from current theories of AM will be discussed in more detail: a hierarchical model of emotional memory based on mnemonic modalities, spanning from action to perceptual to language-based representations, a reconstructive view of memory that gives ample room to reasoning and narration in the process of remembering, and a stress on the interpersonal nature of both central emotional memories and of the process of remembering.

OVERVIEW OF POSTER SESSIONS

Poster session I

Monday June 14, AULA

14.00 – 15.30

Poster No

Cuing and retrieval processes

- 101 Multimodal cuing of autobiographical events; [Miles & Berntsen](#)
- 102 Consolidation of self-relevant memories (sleep); [Horton & Poll](#)
- 103 Multimodal cuing; [Karlsson & Willander](#)
- 104 Music as cues; [Morrison & Conway](#)
- 105 Effects of sleep on AM; [Kristo, Janssen, & Murre](#)

The functions of autobiographical memory

- 106 Effect of aging on functions of nostalgic memories; [Takigawa & Naka](#)
- 107 Functions of AM; [Rasmussen, Berntsen & Habermas](#)
- 108 Empathy and AM; [Bender, Pohl, Chasiotis & Lachmann](#)
- 109 What characterizes life story memories? [Thomsen, Olesen, Schnieber & Tønnesvang](#)
- 110 Functions of AM in single, recurring, and extended event memories; [Waters, Fivush & Bauer](#)
- 111 Life story in gifted young adults – the role of turning points; [Grosch, Moeller & Hany](#)
- 112 Belief and recollection in non-believed and believed AM; [Scoboria & Mazzoni](#)

Social, collective, and cultural aspects of autobiographical memory

- 113 Role of group identification in collective memory; [Mercy, Licata, Luminet & Klein](#)
- 114 Younger and older adults' collective memories of US history; [Butler, Zaromb, Agarwal & Roediger](#)
- 115 Socially shared retrieval-induced forgetting: forgetting shared memories through conversation; [Stone, Sutton, Barnier & Hirst](#)
- 116 Socially shared retrieval-induced forgetting; [Wohl, Koppel & Hirst](#)
- 117 Life script and legal age; [Naka](#)

Autobiographical memory across the lifespan

- 118 Self and AM: young and middle-aged earliest and recent memories; [Demiray & Bluck](#)

Poster No

- 119 Young – old: goal directed AM retrieval; [Lonson, Astell & Dritschel](#)
- 120 Young – old: memories for 2008 US presidential election; [Holland & Kensinger](#)
- 121 Enhancing AM performance of younger and older eyewitnesses; [Felber, Kraus, Schilling, Hansen, Fesefeldt & Köhnken](#)

Clinical aspects of autobiographical memory

- 122 Role of A1/A2 criteria and memory in PTSD; [Broadbridge & Fitzgerald](#)
- 123 Self defining memories in borderline personality disorder; [Jørgensen, Jørgensen, Bech, Kjølbye, Bennedsen & Berntsen](#)
- 124 Intrusive thoughts and PTSD following early non-recognized trauma; [Fohn, Grynberg & Luminet](#)
- 125 Mental Time Travel in High and Low Worriers; [Finnbogadóttir & Berntsen](#)
- 126 Remembering feeling: reflection and rumination as determinants of valence of AM; [McIlwain](#)
- 127 Mental time travel in patients with traumatic brain injury; [Rasmussen](#)

Organisation of autobiographical memory

- 128 Self development across lifespan and organization of AM and future events; [Rathbone, Moulin & Conway](#)
- 129 Prevalence of event clusters across the lifespan; [Svob & Brown](#)
- 130 Context models, AM and interaction; [Bietti](#)
- 131 Life transitions – memories cued by autobiographical contents; [Lee, Brown & Uzer](#)
- 132 Paraplegia and organization of AM; [Uzer, Brown & Lee](#)
- 133 Changes in neural correlates of self positivity bias and mood; [Watson, Dritschel, Obonsawin & Jentzsch](#)
- 134 The self and its role in constructing autobiographical future events; [Cole, Morrison & Conway](#)
- 135 The preminiscence bump; [Bohn & Berntsen](#)

Poster session II
Tuesday June 15, AULA
13.30 – 15.00

Poster No

Cuing and retrieval processes

- 201 Spontaneous autobiographical memory retrieval; [Lonson, Astell & Dritschel](#)
- 202 Neural substrates of direct and generative AM retrieval; [Addis, Knapp, Inger & Schacter](#)
- 203 Current concerns in involuntary and voluntary AM; [Johannessen & Berntsen](#)
- 204 Voluntary suppression of neutral and emotional memories; [Nørby, Lange & Larsen](#)

Social, collective, and cultural aspects of autobiographical memory

- 205 AM memory characteristics and self-construal in 18 year old Slovaks and Norwegians; [Guldbrandsen, Antalikova, Benitez & Hansen](#)
- 206 Long term retention of 9/11 – self reference as a factor; [Meksin & Hirst](#)
- 207 Living in history in Lebanon; [Zebian & Brown](#)
- 208 Life story coherence and wellbeing – cross- culturally; [Chen, McAnally & Reese](#)
- 209 Social identity impacts on rehearsal processes; [Mercy, Luminet, Licata & Klein](#)

Autobiographical memory across the lifespan

- 210 Lifescript and lifestory across generations; [Tekcan, Ece & Kaya](#)
- 211 Young – old: event boundary flexibility; [Hohman & Peynircioğlu](#)
- 212 Reminiscence work in high-cued and low-cued settings; [Jeppesen & Berntsen](#)
- 213 Life narratives across the lifespan; [Diel & Habermas](#)
- 214 Positive and negative experiences in relation to bereavement outcome following the loss of a spouse in old age; [O'Connor](#)

Clinical aspects of autobiographical memory

- 215 Delay-onset of posttraumatic memory related to war; [Fohn & Luminet](#)
- 216 Cognitive vulnerability in bipolar disorder; [Ramos & Cláudio](#)

Poster No

- 217 Trait aggression increases recall of negative AM; [Cameron-Shaw, Dritschel, Campbell & Cook](#)
- 218 Relation between AM, maladaptive schemas and depression; [Cláudio](#)
- 219 Schemas and their relation to childhood AM; [Arelío & Cláudio](#)
- 220 Autobiographical memory retrieval in Parkinson's disease: effects of cueing; [Smith, Conway & Souchay](#)

Phenomenological qualities of autobiographical memory

- 221 Non-believed memories; [Mazzoni & Scoboria](#)
- 222 New topic for AM research: Momentary life review; [Nourkova](#)
- 223 Repeated retrieval slows shift from first to third person perspective; [Rice, Butler & Roediger](#)
- 224 Involuntary and voluntary memory characteristics; [Kawahira & Itsukushima](#)
- 225 Multiplicity of perspectives in AM: some implications of the independence of field and observer vantage-points; [Sutton](#)
- 226 Temporal distribution of recollective memory; [Janssen, St. Jacques & Rubin](#)

Memory development from infancy through adolescence

- 227 Development of working memory in school-aged children; [Lambek & Shevlin](#)
- 228 Narratives of Japanese elementary school children – positive and negative events; [Oyama & Naka](#)
- 229 Cross linguistic (Turkish - German) source monitoring in children; [Balaban, Kraus, Wagener, Köhnken & Aksu-Koç](#)
- 230 Development of understanding truth and lies; [Uemiya & Naka](#)
- 231 A brain-imaging study of memory for words at birth; [Benavides Varela, Gómez, Macagno, Bion & Mehler](#)
- 232 Infants' object individuation; [Kingo & Krøjgaard](#)
- 233 Cultural life scripts and the development of prospective life stories in children and adolescents; [Bohn & Berntsen](#)

POSTER SESSION I

Monday June 14, AULA 14.00 – 15.30

Cuing and retrieval processes

Poster no.:

101 **Multimodal cuing of autobiographical memory: The distinctiveness of odor-evoked events**

[Amanda Miles](#) and [Dorthe Berntsen](#)

Department of Psychology, Aarhus University

Contact email: amanda@psy.au.dk

Proustian memories, or memories spontaneously evoked by taste and odors, have been found to be linked to our remote past. We introduce Mental Time Travel (MTT) to explore the past temporal condition previously examined with a future condition. We investigated the temporal distribution and other phenomenological qualities of autobiographical memories employing a 2 (temporal direction: past vs. future) x 3 (cue type: verbal, visual, and odor) mixed design. We found that while odor-evoked memories were predominantly from the first decade of life, the future condition for odor-evoked memories showed a marked preponderance of future events in the upcoming year. Odor-evoked memories were also less specific for the past condition than the verbal and visual conditions. The odor condition was also responsible for interactions concerning coherency of the events and the events' significance to the life story. The results are discussed in relation to the temporal distance and specificity of the events.

102 **The consolidation of self-relevant information: Effects of self-reference word recall on performance during sleep (opposed to wake)**

[Caroline L. Horton](#), PhD, and [Sarah L. Poll](#), Leeds Metropolitan University, UK

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Psychology, Faculty of Health, Civic Quarter, Calverley Street, Leeds Metropolitan University, Leeds, LS1 3HE, England

We investigated the effect of sleep on the consolidation of self-relevant memories. 50 adult participants; 25 assigned in a sleep- and 25 in a wake-group, were asked to generate 20 words related to themselves and 20 words they related to the Queen. A surprise recall test was administered after 12 hours. Results demonstrated a significant interaction between word type and type of delay period. Other-reference words were better recalled after sleep (opposed to wake); indicating successful consolidation, whereas self-reference words showed no such effect. A self-reference effect was found within the wake group but not in the sleep group. This may demonstrate either the relative de-activation of self-systems (such as medial-prefrontal regions) within autobiographical memory during sleep, or that the "self" stimuli had previously been processed adequately such that no further consolidation was required after 12 hours.



103 Multimodal cuing of autobiographical memory

[Kristina Karlsson](#) and [Johan Willander](#)

Department of Psychology, Stockholm University, Sweden

Contact: [Johan Willander, jwill@psychology.su.se](mailto:Johan.Willander@psychology.su.se)

In the present study participants ranging in age between 19-40 years were randomized into one of four retrieval cue conditions (i.e., visual, olfactory, auditory, or multimodal) and asked to retrieve autobiographical memories related to the cues. All memories were dated and rated on five phenomenological dimensions (e.g., pleasantness, the feeling of being brought back in time). Preliminary results indicate that the bump of the visual distribution was located to 10-25 years. For the olfactory distribution the bump was localized to 6-15 years. Importantly, the distributions for the multimodal and auditory conditions peaked between 10-25 years. No significant differences were found between any of the cue-conditions with respect to phenomenological experience. The results replicate and extend previous studies on the age distribution of autobiographical memories.

104 Memories of The Beatles: Using music as a cue for memory

[Morrison, C.M.](#) and [Conway, M.A.](#)

Email c.morrison@leeds.ac.uk

Music is increasingly being recognised as a means by which to investigate autobiographical memory. In this study we used a global cultural icon – The Beatles – as a cue for memory. Respondents to an online questionnaire were asked to conjure up their most vivid memory relating to The Beatles. The memory could be cued in a variety of ways: a song, concert, album or event. Nearly 4,000 people participated in the study, from a broad range of countries and backgrounds. As one would expect there was a reminiscence bump effect, such that the majority of memories recalled dated to when participants were in their teenage years. Particularly striking were the emotional nature of the memories, and despite the diversity in the demographics of our participants, the similarity amongst them in the nature of the memories they reported. This is further evidence that music serves as a good cue for autobiographical memory.

105 Effects of sleep on Autobiographical Memory

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Several studies have recently found a positive correlation between sleep and memory consolidation. In this online study, the effects of the quality of sleep on autobiographical memory were examined, using an Internet-based diary technique (Kristo, Janssen & Murre, 2009). Each participant recorded on a website one recent personal event and was contacted

after a retention interval that ranged between 2 and 45 days. The recall of the content, time and details of the recorded event was compared to the quality of sleep, which was measured with the Pittsburgh Sleep Quality Index (PSQI). Participants who reported to have slept well lately could recall their personal events better than participants who had slept poorly. Several subject and event variables, such as age, gender, importance and pleasantness, were examined for their potential mitigating influence on the relationship between sleep quality and the recall of autobiographical memory.

The functions of autobiographical memory

Poster no.:

106 Effect of aging on the functions of nostalgic memories

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When people reminisce about autobiographical memories, they often report having feelings of nostalgia. Reminiscing has eight different functions and the usage of these functions tends to change with age (Webster, 1993, 1997). The present study aimed to clarify which of the reminiscing functions applies to memories that elicited nostalgic feelings. In this study, 266 participants, whose age ranged from 18 to 88 years, were first asked to describe a personal event and then given the Nostalgic Emotion Scale (Takigawa & Naka, 2009) and the Reminiscence Functions Scale (Webster, 1993, 1997). Results indicated that all participants used nostalgic memories for "Identity", "Conversation", "Intimacy Maintenance" and "Teach/Inform" purposes, whereas "Problem Solving", "Death Preparation" and "Bitter Revival" were related to age. The first one was not used by middle-aged adults, while the latter two were mainly used by older adults. "Boredom Reduction" was not a function of nostalgic memories.

107 The directive, self and social functions of autobiographical memory: Individual memories and individual differences

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The present four studies address the directive, self and social functions of autobiographical memory. In Study 1, participants generated memories that mapped onto each of the three functions (i.e., directive, self and social memories). Directive memories were dominated by negative emotion, whereas self- and social memories were dominated by positive emotion. In Study 2, participants generated their most positive and negative memories. Consistent with Study 1, negative memories were rated higher on the directive function, whereas positive

memories were rated higher on the self- and social functions. Studies 3 and 4 addressed the relationship between individual differences in the overall usage of the three functions and the Five-Factor model of personality. Across the two studies, Openness was positively related to the directive and self-functions, whereas Neuroticism was positively related to the self-function. Extraversion was positively related to the social function, but only in Study 3.

108 **The relationship between empathy and autobiographical memory**

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In three studies, we investigated the relationship between empathic skills and autobiographical memory (AM). In Study 1, participants were presented with either empathy-inducing picture stimuli or control stimuli, and were tested for AM performance and empathy. Results revealed that participants in an empathy-inducing context exhibited more empathy and better AM recall. To demonstrate that the enhanced recall of personal memories can be attributed specifically to the empathy-inducing quality of the pictures, and not to their emotional valence, we conducted Study 2: participants were presented with either emotional or neutral picture stimuli, both void of empathy-inducing aspects. We obtained no differences between these conditions, neither in empathy, nor in AM recall. In a final study, we investigated whether a priming of AM would increase empathy (thus mirroring Study 1). These findings suggest an important but largely neglected link between empathy and AM: Individuals tap into their personal memories to exhibit empathy.

109 **What characterizes life story memories? A 5-month diary study of first term university students**

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This prospective study compared life story memories to randomly selected memories, both types of memories sampled from the first term at university. 61 participants described and rated 2 experiences each week during their first term at university (September-January). 3 months later participants were tested. They were instructed to tell the part of their life story covering their first term at university and recall 3 memories from their diaries that they felt were important to this life story segment. 3 randomly selected experiences from the diary served as control memories. Life story memories were rated higher on emotional intensity, rehearsal, goal-relevance and importance at the time of the experience (i.e. using the diary ratings) compared to control memories. However, there were no differences on unusualness, pre-planning or emotional valence. Thus, life story memories were highly selected, but were not considered more unusual or more positive than other autobiographical memories.

110 Functions of autobiographical memory in single, recurring, and extended event memories

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Memory researchers have argued that autobiographical memory serves three basic functions: self definition, social connection and directing future behavior (Bluck, Alea, Habermas & Rubin, 2005; Pillemer, 2003). These basic functions have been examined in single, unique, events (an event taking place in a 24 hour period). However, current theories of the organization of autobiographical memory include other types of events, such as recurring events (events experienced multiple times) and extended events (single events occurring over periods longer than one day) (e.g., Conway & Pleydell-Pearce, 2000). Thus we examined relations among these three functions of autobiographical memory for single, recurring and extended events. Narratives and questionnaires collected from 52 undergraduates were coded on expression of self, social, and directive functions. Interestingly, single and extended events serve significantly more self and directive functions compared to recurring events whereas recurring events serve an increased social function compared to single or extended events. Implications of these findings for theories of autobiographical memory are discussed.

111 Life story in gifted young adults – role of turning points for personality development

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Telling one's life story is a central part of personality and identity development (Habermas & Bluck, 2000). Personality development can be seen from an action-oriented perspective as well as from a reflective and constructive one. Both are related to the directive function of autobiographical memory (Bluck, Alea, Habermas & Rubin, 2005). Especially turning points and their interpretation are supposed to be opportunities for psychological growth (Bauer & McAdams, 2004). We investigated how far crystallized opportunities for learning are central for gifted young adults' personality development. 67 gifted young adults (17 male, 50 female) with average age of 29 years wrote down their life story in chapters including peak experiences and turning points, similar to McAdams' Life Story Interview (1993). Analyses of nuclear episodes serving as opportunities for communal or agentic growth and their causal and thematic relations to life stories are presented.

112 Belief and recollection in non-believed and believed autobiographical memories

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The distinction between believing autobiographical events and the recollection of autobiographical events plays an important role in prominent theories of autobiographical memory and false memory formation. In this study we examined belief and recollection in a recently



described type of memory representation, the 'non-believed memory'. In recent work we found that non-believed memories occur frequently and share many features in common with believed memories. Here we present data from a new, larger sample of respondents reporting non-believed memories and age matched believed memories. Respondents rated belief, recollection, and other characteristics associated with autobiographical memory in prior research. We examined the relationship between ratings of belief and recollection for these events using factor analytic techniques. The resulting models demonstrate independent belief and recollection factors, and similarities in the factor structure for non-believed and believed memories. Additional relationships between belief, recollection, and other phenomenal characteristics (e.g., perceptual characteristics) are discussed.

Social, collective, and cultural aspects of autobiographical memory

Poster no.:

113 **The role of group identification and ideology in the collective memory of the separation of the University of Louvain**

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In the 1960's, the linguistic conflict in Belgium became virulent on the question of the status of the University of Louvain, bilingual, but located in the Dutch-speaking territory. The Dutch-speaking students engaged in actions to evict the French-speakers from the Louvain campus. After years of conflict, the French-speakers eventually left Louvain. This study investigates the content of collective memories of these events in two groups of former French- and Dutch-speaking students (N=124) who were present in Louvain during the crisis. Our results show that the perceived legitimacy of the Dutch-speakers' claims is predicted by subgroup identification (French-speakers vs Dutch-speakers) and by common ingroup identification with the national group (Belgian). This effect was mediated by the ideological perception of territorial rights. In addition, the perceived legitimacy of the Dutch speakers' claims during the Louvain crisis predicted attitudes towards a contemporary conflict involving territorial rights.

- 114 **Similarities and differences in younger and older adults' collective memories of U.S. history**
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A collective memory is a body of knowledge that is shared by a group of individuals. We investigated similarities and differences in the collective memories of younger and older adults for events in U.S. history. Participants were asked to recall the 10 most important events that occurred during 3 major wars in U.S. history: the current Iraq War, World War II, and the Civil War. Among the younger adults, there was greater variability in the events recalled for the Iraq War than for both World War II and the Civil War. Older adults' recall of events for the Iraq War also showed the greatest variability, but there was also a greater degree of variability in their recall for World War II than for the Civil War. The results demonstrate that empirical analyses can be used to describe the similarities and differences in collective memories between groups.

- 115 **Forgetting each other's shared, autobiographical memories through conversation: Socially shared retrieval-induced forgetting within intimate couples**
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The way individuals remember their autobiographical past is shaped by the conversations they have with others about this past. The selective retrieval of memories in the course of a conversation can induce forgetting for unmentioned, but related memories for both the speaker and the listener (Cuc, Koppel, & Hirst, 2007). Cuc et al. define the former as within-individual retrieval-induced forgetting (WI-RIF) and the latter as socially shared retrieval-induced forgetting (SS-RIF). Recently, these effects have been extended to autobiographical memories, however, only involving conversations between strangers (Stone, Barnier, Sutton, & Hirst, in preparation). We followed the standard SS-RIF procedure, but recruited intimate couples as they are more likely to share and form autobiographical and collective memories together. We demonstrated WI-RIF and SS-RIF in the course of a conversation when intimate couples discussed their autobiographical memories. We found this effect endured regardless of whether the memories were jointly encoded or verbally shared.

- 116 **Social and Explicit Pre-warnings in Manipulating Credibility: A Socially-Shared Retrieval-Induced Forgetting Perspective**
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The present research explores the effects of selective remembering in a group on subsequent memory. Specifically, it examined the effect of a warning on Socially-Shared Retrieval-Induced Forgetting (SSRIF), contrasting it with warning effects on social contagion. In a modification

of the standard RIF paradigm, pairs of individuals studied stories consisting of similar, yet subtly distinctive events. In the experimental condition, prior to a collaborative recall task, listeners were “warned” that their partner was intending to mislead them and must therefore closely monitor their partner while engaging in the conversational component of the study. No warning was given in the control condition. After the collaborative recall, individual memories were assessed. Results showed the standard decline in social contagion in the presence of a warning, but, in contrast, demonstrated an increase in levels of SSRIF. The results are interpreted in terms of current theory of socially shared retrieval-induced forgetting.

117 **Lifescrypt and legal age**

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Japanese are known to have a long life expectancy of 82.3 years. Less known is that Japanese’s legal ages for voting, drinking, etc. are set to be 18 or 20, which are relatively late. The purpose of this study was to see how biological and institutional factors affect the life script. A total of 513 Japanese participants aged from 18 to 74 responded to a life script questionnaire based on Berntsen and Rubin (2004). Results showed that, as compared with previous research in western cultures, Japanese life was expected to be longer, but events, such as graduation, having a job, and marriage, were expected to occur at about the same age, suggesting that the life script does not expand proportionally with the length of life. Despite legal ages being set at 18 and 20, related events were scattered between the ages of 17 and 28.

Autobiographical memory across the lifespan

Poster no.:

118 **The relation of self to autobiographical memory: Comparing young and middle-aged adults’ earliest and recent memories**

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The study tested the Self-Memory System model (Conway, Singer & Tagini, 2004) by examining the link between current self-characteristics and the self-related content of earliest and more recent memories. Young and midlife adults’ current sense of self-characteristics (personal growth, self acceptance, positive relations and autonomy) were assessed. Analyses examined whether current self-characteristics were reflected in memory narratives. As predicted, recent memories were strongly linked to current self-characteristics in both age groups: all four current self-characteristics predicted the inclusion of these themes in recent memories. For earliest memories, however, only positive relations was associated with memory content for either age group. Adult age differences appeared in the link between

self-characteristics and recent memories. Only young adults' current personal growth predicted personal growth content of memories. The link between current positive relations and positive relations content was weaker in young adults. Findings suggest possibilities for expanding and refining the Self-Memory System model.

119 **Differences between younger and older adults in goal-directed autobiographical memory retrieval**

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The purpose of this project was to compare the influence of goal structures on the retrieval of self-defining memories between older and younger adults. Thirty-two older, and thirty-seven younger adults were recruited to generate five self-defining autobiographical memories (AM) and complete Lang and Carstensen's (2002) card sort task in alternate sessions. It was predicted that if accessibility to past AM is indeed mediated by the individual's current goal structure, than this would mean that memories where important goal processing occurred would be more highly accessible.

120 **Younger and older adults' memories for the 2008 U.S. Presidential election**

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The 2008 U.S. Presidential election provided a unique opportunity to examine younger and older adults' memories for an event whose outcome could be viewed as positive or negative. More than 200 adults (ages 18-85 years) answered surveys about the election within 2 weeks of the event and again 5 months later. The surveys probed memory for personally-relevant details (e.g., **What were you wearing when you learned the outcome?**) and factual details (e.g., **What percentage of votes did the winner receive?**). Responses were coded for consistency between the two time points. Younger and older adults were equally consistent in their recall of personal event details independent of whether they viewed the outcome as positive or negative. However, within both age groups, individuals displayed better memory consistency for factual details if they viewed the outcome as negative. Results will be discussed in terms of previous research on emotional memory across the lifespan.

121 **Enhancing autobiographical memory performances of younger and older eyewitnesses**

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Memory research has shown that older adults often report a lower number of memory characteristics of events. Because most studies used stories or videos, it is possible that they underestimate memory performances of older adults and do not reflect their memory performances after

experiencing real-life events. In our study we examined autobiographical memory performances of younger and older adults in a staged event to examine the extent of age differences in a simulated crime. Furthermore, we examined the effects of an introductory training for the Cognitive Interview (CI) which included a detailed example and practicing. 40 younger and 40 older adults experienced a staged theft. After a one-week-delay they were interviewed by a staged security officer using a CI either with or without an introductory training. Our study revealed larger age differences and a specific advantage of the CI training for younger adults.

Clinical aspects of autobiographical memory

Poster no.:

- 122 **An examination of the role of the A1/A2 criteria and memory in posttraumatic stress disorder**
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Rubin's (2006) basic systems model of memory has brought controversy to posttraumatic stress disorder (PTSD) research, particularly regarding traumatic event memories in individuals with PTSD. The present study examined differences in symptomology and metacognitive judgments of memories for stressful life experiences as a function of the A1/A2 criteria for PTSD. Qualitative comparisons revealed no measurement differences by A1 or A2 group membership for either symptom severity or metacognitive judgments. Quantitative comparisons revealed that participants meeting the A2 criterion presented with more severe symptoms and higher belief in and greater intensity associated with their stressful memories than those not meeting the A2 criterion. Mediational models suggest indirect and direct effects of the A2 criterion on PTSD symptomology. Additionally, individuals meeting the A1 criterion showed higher levels of belief in stressful memories than those not meeting the A1 criterion. The results of this study may have implications for PTSD diagnosis and treatment.

- 123 **Self-defining autobiographical memories in borderline personality disorder, OCD, and normal controls**
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Stine Ramsgaard Jørgensen, Clinic for OCD, Århus University Hospital
Morten Bech, Department of Psychology, Aarhus University
MD. Morten Kjølbye, Clinic for Personality Disorders, Århus University Hospital
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Autobiographical memory is crucial for a sense of identity and direction in life. Further, a well-functioning identity is anchored in a stable identification with norms and ideas about

the 'normal life' that are shared within a culture. One measure of such norms is cultural life scripts. The present study examined autobiographical memory and cultural life scripts among patients with SCID-II diagnosed Borderline PD – a disorder associated with severe disturbances of personal identity. The participants generated three autobiographical memories central to their personal life story and identity and completed the cultural life script task. Compared to a normal control-group, the autobiographical memories of participants with BPD were more emotionally negative, less specific, older and less consistent with event categories in the cultural life script. In addition, the cultural life scripts generated by the BPD patients were more idiosyncratic (less normative) compared to the ones generated by the controls.

124 **Reappraisal as a cognitive process increasing intrusive thoughts and post-traumatic distress following an early non-recognized trauma**

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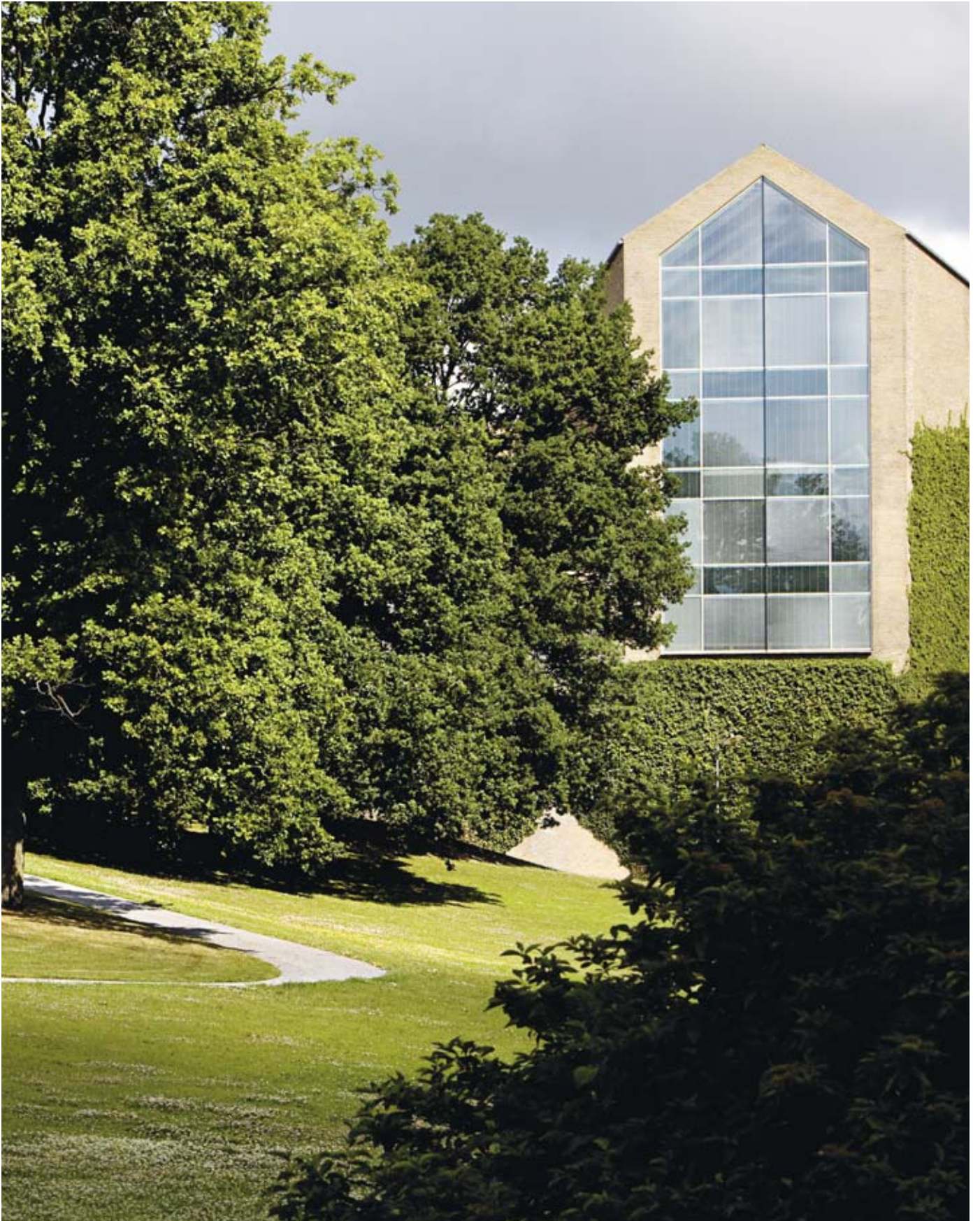
This study examines the long-term impact of early traumatic events on memory, particularly on intrusive thoughts in a population who suppressed memories for fifty years. Methods: A nonclinical sample of 54 Jewish hidden child survivors of the Holocaust (29 women and 25 men) completed the Impact of Event Scale-Revised (IES-R) and the Thought Control Questionnaire (TCQ). We expect cognitive strategies to control unwanted thoughts to predict current posttraumatic distress and intrusions sixty years after traumatic events. Results: Hierarchical regression analyses showed that more reappraisal predicted IES-R total score ($\beta = .472$) and intrusions ($\beta = .437$). Being a female ($\beta = -.290$) and lower education ($\beta = -.354$) were also significant predictors for IES-R total score. Discussion: Reappraisal, as a process linked to a search for meaning, might be an ineffective cognitive strategy in such powerful traumas.

125 **Mental Time Travel in High and Low Worriers**

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High (N=21) and low (N=16) worriers recorded involuntary and voluntary autobiographical memories and future projections using a structured diary method. Participants also completed questionnaires assessing depression, personality factors, daydreaming style, and thought suppression. Compared to low worriers, high worriers scored higher on depression, neuroticism, thought suppression and negative daydreaming styles, and lower on extraversion. High worriers rated personal memories and future projections lower on measures of self-relevance, than did low worriers. Furthermore, there was a positive correlation between ratings of an event's self-relevance and ratings of an event's emotional intensity. Finally, in reporting their memories and future projections, high worriers used more past tense compared to low worriers, and used more anxiety related words. The findings will be discussed in terms of cognitive avoidance.



126 **Remembering feeling: reflection and rumination as determinants of the valence of autobiographical memories**

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How does genuine reflection differ from forms of emotional avoidance like rumination, distraction, or intellectualisation? Reflection produces mood-incongruent memories, while ruminative focus produces mood-congruent recollections. Studies of non-ruminative ways of accessing the past often measure reflection as either the mere absence of rumination, or as distraction. We offer a positive account of reflection, within an emotion theory (Lambie & Marcel, 2002) which sees emotion experience as underdetermined by bodily clout. We distinguish what you attend to, with what emotions, how fully you experience the emotions, and how they are attended to. This parallels Nolen-Hoeksema's account of subcomponents in rumination: a focus on symptoms and self-experience (self-focus), and an analytical, evaluative cognitive style. Our 'reflecting on feelings' scale shows reflection's links to and differences from rumination, and its relations to valence, specificity and generality in autobiographical memory. We explore implications for depression and PTSD of a capacity for reflecting on feelings.

127 **Mental Time Travel in patients with Traumatic Brain Injury**

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Mental Time Travel (MTT) is the ability to mentally project oneself backward in time to relive past experiences and forward in time to prelive possible future experiences. It has been claimed that recalling the past and imagining the future are intimately interrelated mental processes. Previous research has shown that traumatic brain injury (TBI) can be linked to an impaired ability to remember the personal past. However, the ability to project oneself into the future has received little empirical attention. This study examined the capacity for MTT in 9 adults diagnosed with moderate to severe TBI. Results showed that TBI patients compared with healthy controls were significantly impaired in recalling episodic autobiographical memories and were even more impaired in imagining specific future events. The study confirms previous findings of a specific deficit in generating episodic autobiographical memories in TBI patients and provides evidence that this deficit extends to the ability to imagine specific future events.

Organisation of autobiographical memory

Poster no.:

128 **The role of self-development across the lifespan in the organisation of autobiographical memories and imagined future events**

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This study investigated whether temporal clustering of autobiographical memories (AMs) around periods of self-development (e.g. Rathbone, Moulin & Conway, 2008; 2009) would also occur when imagining future events associated with the self. Participants (n = 40; mean age = 19.43) completed an AM task and future thinking task. In both tasks, memories and future events were cued using participant-generated identity statements (e.g. I am a student; I will be a mother). Participants then dated the 15 memories and 15 future events generated, and finally gave an age at which each identity statement was judged to emerge. Dates of memories and future events were recoded as temporal distance from the identity statement used to cue them. AMs and future events both clustered robustly around periods of self-development, indicating the powerful organisational effect of the self. Findings suggest that life narrative structures are used to organise future events as well as memories.

129 **On the prevalence of event clusters across the lifespan**

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This study was designed to track changes in the organization of autobiographical memories from childhood to late adolescence. Prior research (Brown, 2005) has shown that event memories from high school are commonly embedded in story-like event clusters and that clustering is less common when cueing events are drawn from childhood. The present study takes a closer look at this finding and examines the relationship between retrieval strategy, cueing-event age, and cluster-mate retrieval. To do this, we are collecting event-cueing data, RTs, and strategy reports from university students cued with grade school (grades 1-3), junior high (grades 7-9), or high school (grades 10-12) memories. Preliminary results indicate that high school cues elicited the highest percentage of cluster-mates and grade school memories the lowest. Also, across conditions, direct retrieval was common when a cue elicited a cluster-mate and uncommon when it did not.

130 **Context models, autobiographical memory and interaction**

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Autobiographical memory guarantees the ability to maintain both a coherent awareness of one's self over time and a consistent feeling of identity. It also functions to structure the



shareable life story of a people. Self-narratives are the most natural cultural resources for reconstructing autobiographical memories. Self-narratives are created in accordance with cognitive representations of the context (context models) that control the ways of representing oneself in relation to the environment. Context models not only work with information perceived, encoded, stored, and retrieved by episodic memory and short-term memory, but also with socially shared knowledge, attitudes and opinions. They are continually reshaping throughout the verbal interaction depending on the speaker's specific goals. The aim of this poster presentation is to show the ways in which context models sustain a coherent and consistent self-positioning in real-world settings and are the key to understanding how autobiographical memories and a life story schema are interconnected and realized in self-narratives.

131 **The effect of life transitions on memories cued by autobiographical contents**

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Life transitions can have significant effects on how autobiographical memories (AM) are organized and retrieved. Transitions mark changes in the components of autobiographical narratives (e.g., people met, places frequented, activities undertaken). We studied students who relocated to attend university and students that did not, by comparing temporal distribution of AMs, proportions of directly retrieved AMs, and reaction times. First, participants recalled 12 components. Next, participants recalled memories involving components plus 12 nouns, and then dated them. Finally, participants reported durations associated with components (first/last time of occurrence). When cued by components, relocators reported more memories since starting university, but non-relocators retrieved more pre-university memories. Direct retrieval was greater for non-relocators cued by nouns. Between group differences were observed in the temporal duration of components. We describe transitions as dynamic, discriminated in time and content, and demonstrate that transitions are graded changes that may impact the organization and retrieval of AM.

132 **The impact of paraplegia on the organization of autobiographical memory**

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Prior research showed that transitional events and the periods they define play an important role in the organization of autobiographical memory (AM). However, this research has focused on positive or socially sanctioned transitions (e.g., entering to university, marriage) or on negative group-level transitions (e.g., war, natural disaster). However, little is known about negative transitions that occur at the individual level. The present study addressed this issue by examining the organization of AM in paraplegics. Participants, all of whom suffered debilitating accidents, first recalled specific autobiographical memories in response to cue words. Next, they thought aloud as they estimated when the events occurred, and finally, they indicated whether each recalled event was injury-related. Preliminary results suggest

that our participants treat the sudden onset of paraplegia as a landmark event. In turn, this implies that the organization of AM reflects major life changes even when these changes are unexpected, disruptive, and idiosyncratic.

133 **Changes in neural correlates of the self positivity bias as a function of mood**

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The aim of the present research was to examine how neural correlates of the self-positivity bias are altered as a function of mood. Using scores on the BDI-II as a grouping variable 54 participants were divided into euthymic, mild low mood and moderate low mood groups. Participants were asked to judge individual words as "like me" and "not like me" in a self-referential judgement task. Reaction time, frequency of response and event-related potentials (ERPs) were analysed. Consistent with previous literature the results suggest that as participants' level of low mood increases their judgements about themselves become less positive and more negative. Furthermore the ERP responses of the mild and moderate low mood groups differed when compared to the euthymic group. These results provide the first evidence to suggest that neural correlates of the self-positivity bias are altered as a function of mood. This work suggests that changes in mood may influence the neural structures involved both in the formation and maintenance of autobiographical memory.

134 **The self and its role in constructing autobiographical future events**

Cole, S.N., Morrison, C.M. and Conway, M. A.

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A key theme in autobiographical memory research is the idea that memories are important in shaping our sense of self and identity. One extension of this idea is that imagining possible future autobiographical events is important in our current sense of self. In two experiments, we asked participants to imagine and describe plausible future events and past events from three temporal periods from the present (week, 6-12 months, 5-10 years) and to rate their subjective characteristics (vividness, valence, emotional intensity, importance to current self/ life story). The data from the online questionnaire study (N=103) and 'think aloud' experiment (N=21) indicated that temporally-distant future events were more emotionally intense and important to the self and that past events were experienced with more vividness. These results highlight the personal relevance of imagining future events to the self, broadening the influence of autobiographical memory processes to include the future as well as the past.

135 **The preminiscence bump: Cultural life scripts organize children's future life stories**

Annette Bohn and Dorthe Berntsen,

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Cultural life scripts are mental representations of culturally expected events in a typical life and their age norms (Berntsen & Rubin, 2004). They are semantic knowledge, and are used as outlines to tell our past (producing the reminiscence bump) and hypothesized to give an outline for future lifestories. In two studies, we tested this hypothesis. 142 children and adolescents wrote their future lifestory. The lifestories consisted mainly of life script events (79%), and contained a very clear "preminiscence bump" in young adulthood. Asking for future personal events to word cues did not produce a preminiscence bump. The finding of the preminiscence bump in children's future lifestories cannot be explained by enhanced encoding and maintenance of events in young adulthood as proposed by biological, cognitive and life-narrative explanations of the reminiscence bump. Our findings support the hypothesis that the life script is the overarching organizational principle of autobiographical memories and future representations across the life span.

POSTER SESSION II

Tuesday June 15, AULA 13.30 – 15.00

Cuing and retrieval processes

Poster no.:

201 Spontaneous autobiographical memory retrieval in older and younger adults

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The aim of this project was to examine specific versus significant autobiographical memories using two different paradigms with regard to goal structures. 28 older and 29 younger adults were recruited for this project. In alternate sessions, participants were asked to generate specific autobiographical memories (AM) in response to word cues and significant AM in response to picture cues. Retrieved AM were coded for age at encoding, valence, autonomous orientation, and theme; then these variables were examined with regard to goal structures.

201 Common and distinct neural substrates of direct and generative autobiographical memory retrieval

Donna Rose Addis^{1,2*}, Katie Knapp¹, Melissa Inger¹, Daniel L. Schacter^{3,4}

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Models of autobiographical memory propose two routes to retrieval depending on cue specificity. When available cues are specific and personally-relevant (e.g., "breaking my leg"), the memory can be directly accessed. However, when available cues are generic (e.g., "leg"), one must engage a generative retrieval process to specify more specific cues to successfully access a relevant memory. The current study sought to characterize the neural bases of these retrieval processes. During functional magnetic resonance imaging (fMRI), participants were shown personally-relevant cues to elicit direct retrieval, or generic cues (nouns) to elicit generative retrieval. Both retrieval tasks engaged the autobiographical retrieval network, including hippocampus, and medial prefrontal and parietal cortices. However, many regions comprising this network were activated significantly more during direct versus generative retrieval, possibly reflecting the greater detail of directly accessed memories. Generative retrieval differentially recruited lateral prefrontal and temporal regions, likely supporting the generative aspect of this retrieval process.

203 Current concerns in involuntary and voluntary autobiographical memories

Kim Berg Johannessen and Dorthe Berntsen, Department of Psychology, Aarhus University
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Involuntary autobiographical memories are conscious memories of personal events that come to mind with no preceding attempts at retrieval. It is often assumed that such memories are closely related to current concerns – i.e., uncompleted personal goals. Here we examined

involuntary versus voluntary (deliberately retrieved) autobiographical memories in relation to earlier registered current concerns measured by the Personal Concern Inventory (PCI; Cox & Klinger, 2000). We found no differences between involuntary and voluntary memories with regard to frequency or characteristics of current concern related contents. However, memories related to current concerns were rated as more central to the person's identity, life story and expectations for the future than non-concern related memories, irrespective of mode of recall. Depression and PTSD symptoms correlated positively with the proportion of current concern related involuntary and voluntary memories. The findings support the view that involuntary and voluntary remembering is subject to similar motivational constraints.

204 **Forgetting to forget: On the duration of voluntary suppression of neutral and emotional memories**

Simon Nørby, Martin Lange, Axel Larsen

e-mail: sno@dpu.dk (Simon Nørby)

Can we control the content of our memory and forget what we do not want to think about by an act of will? If so, is forgetting temporary or permanent, and is it independent of the nature of what we wish to forget? Using Anderson and Green's (2001) "think/no-think" paradigm with neutral and emotional nouns, we found in agreement with other studies that memory for neutral words was reduced instantly upon repeated attempts at suppression. However, the effect was temporary and vanished after a period of one week, which strongly suggests that intended memory suppression interferes with immediate retrieval but does not lead to long-term forgetting. Furthermore, the amount of training that clearly reduced immediate recall of neutral items did not at all reduce recall of emotional items. This finding is in accordance with the notion that emotional items have a higher degree of salience and tend to attract more attention than neutral items.

Social, collective, and cultural aspects of autobiographical memory

Poster no.:

205 **Autobiographical memory characteristics and self-construal in 18 year old Slovaks and Norwegians**

Knut Arild Gulbrandsen¹, Radka Antalikova¹, Manuel De la Mata Benítez², Tia Hansen¹

¹Aalborg University, ²University of Seville

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Studies of autobiographical memory (AM) characteristics and their concurrence with a particular type of self-construal have shown significant differences across cultures. However, most of this research has concentrated on earliest memories and on showing their differences between two prototypical cultural settings, American and East-Asian. As part of a European



extension project, the present study looked for contextual stability or flexibility in AM characteristics, by comparing memories from three significant areas of life - family, school and friends - in a Northern and an Eastern European sample (22 Norwegians and 40 Slovaks).

206 **The long-term retention of the terrorist attack of September 11: self-reference as a factor**

Robert Meksin and William Hirst, New School for Social Research

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More than 3,000 individuals from seven U.S. cities reported after one week, 11 months, and 35 months their memories of both learning of and details about the terrorist attacks of September 11. Studies of flashbulb memories examining long-term retention have examined various factors affecting this retention. To date, no one has examined the relation of self-reference to retention of flashbulb memories and memory for flashbulb events. The present paper demonstrates that self-reference is a factor. The results are discussed in terms of community memory practices.

207 **Living in history in Lebanon: How the civil war and other historical events affect the organization of autobiographical memory**

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Emerging research shows that historically significant public events have the power to organize autobiographical memories (Brown & Lee, in press; Brown et al. 2009). The effect has been coined the Living in History Effect (LiH effect) and has been observed among post civil war Bosnians, in post earthquake Turkey and among WWII generation Danes and Dutch. Curiously though, the LiH effect was not observed among post-9/11 Americans and Israelis in their 20's. The current study examines the LiH effect in two groups of Lebanese middle age adults who lived through the Lebanese civil war and afterwards. Brown et al.'s two-stage memory cueing procedure was adapted for the current study and we also used the War Events Questionnaire (WEQ) to assess level of war exposure (Karam et al.). Results revealed a strong LiH effect among 50-65 year old individuals who lived in Beirut during the Lebanese civil war and a weaker effect among Lebanese from the Bekaa Valley in N.E. Lebanon (a rural region where the fabric of life was not radically altered by conflicts). Additionally, the data from the WEQ suggests the LiH effect for each individual is not significantly correlated with level of war exposure. The results suggest that the LiH effect is related to societal level of disruption rather than individual levels of war exposure.

208 Life story coherence and psychological well-being: A cross-cultural perspective

Yan Chen*, Helena McAnally, Elaine Reese, University of Otago

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Adults who tell coherent, meaningful life stories also experience better psychological well-being. For adolescents, however, insight into life events is sometimes linked to lower well-being, and this link is moderated by gender. In the current study, we predicted that this link would also vary as a function of culture. We collected life story narratives from 75 European and 78 Chinese New Zealanders aged between 12 and 20, and various aspects of psychological well-being and different forms of identity were also measured. As an indication of narrative coherence, life stories were coded for context, chronology, theme and insight. Results will be discussed in terms of how life story coherence becomes associated with well-being as a function of culture, age and gender. Based on past research, we predict that the link between life story coherence and positive well-being will occur later for boys and for Chinese adolescents.

209 Social identity impacts on rehearsal processes and memory vividness: the separation of the University of Louvain, Belgium, from both sides of the linguistic conflictAurelie Mercy¹, Olivier Luminet², Laurent Licata¹, Olivier Klein¹¹Université Libre de Bruxelles (ULB), Belgium, ²Université Catholique de Louvain (UCL) & Fonds National de La Recherche Scientifique (FNRS), Belgium

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During the 1960's, the quarrel between the French-speaking and the Dutch-speaking communities in Belgium, since then non-violent, turned into a more brutal conflict. The Dutch-speaking students of the Louvain University demonstrated in favour of the eviction of the French-speaking students and staff, which led to the splitting of the University. French- and Dutch-speaking students shared a common experience, but from opposing standpoints. We compared the vividness of these memories between two groups of former students (N = 124), as well as factors predicting it. Whereas Linguistic group did not influence Vividness, it was predicted by different processes. Dutch-speakers reported more rehearsal of the events, which positively influenced Vividness. This relation proved negative among French-speakers. In addition, political involvement positively impacted on rehearsal among Dutch-speakers, whereas only negative emotions affected French-speakers' rehearsal. Results are discussed with regard to the social identity processes underlying memory processes.

Autobiographical memory across the lifespan

Poster no.:

210 **Stability of life script and life story events across generations**

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The life-script account argues that people's expectations about a typical life guide autobiographical memory retrieval. The main aim of the present study was to investigate the stability of life scripts and retrospective (real) and prospective (expected) life story events across three age groups (young, middle-aged, and older adults). We also manipulated instructions so that the participants in all age groups created a life script either for a newborn or for a person of same age as themselves. Results showed that although the age of the target person influenced the life scripts to some extent, there was a set of core life script events common to all age groups and that the bump for positive life script events remained robust. Comparison of the events common to a person's life script and life story showed that the expected and real ages for these events were strongly correlated, but only for positive events.

211 **Event boundary flexibility in younger and older adults**

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In an earlier study we found that event boundaries were often flexible and varied as a function of, among other variables, the passage of time. The most rigid boundaries were for events from early childhood and from one hour prior to recall. In this study, we extended this research to include middle-aged (40-60) and elderly (75+) adults to tease out the impact of age at encoding from that of elapsed time, as well as to explore the effect of age at recall on boundary flexibility. Preliminary results indicate similar patterns for older adults, suggesting that boundaries of early childhood and very recent events are fundamentally different from those of other time periods although for different reasons. The findings suggest that the encoding environment and the reconstructive process at recall interact to determine the location and flexibility of event boundaries.

212 **Reminiscence work with elderly people with impaired autobiographical memory in high-cued setting and low-cued setting**

Tina Jeppesen and Dorthe Berntsen, Department of Psychology, Aarhus University

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The authors introduce a new method of examining the effects of reminiscence work with elderly people with impaired autobiographical memory (IAM). Elderly people with IAM

participated in reminiscence work in two different settings: A high-cued setting (HCS) and a low-cued setting (LCS). In HCS, the participants visited an authentic home from 1910 in "The Old Town" (an open air museum of urban history). Participants were cued by the authentic setting, objects from a reminiscence box and an old-fashioned snack. In LCS, the participants were served a modern snack in a neutral classroom. In both settings, members of the staff lead a group conversation with the whole group. The following parameters of autobiographical memory were examined: Degree of spontaneous memory information, emotional intensity and vividness. Additionally, social engagement, engagement in activities, and communication between the participants were probed, and the relation between all factors was examined.

213 **Development of autobiographical remembering: Detailedness and emotionality of life narratives across the lifespan**

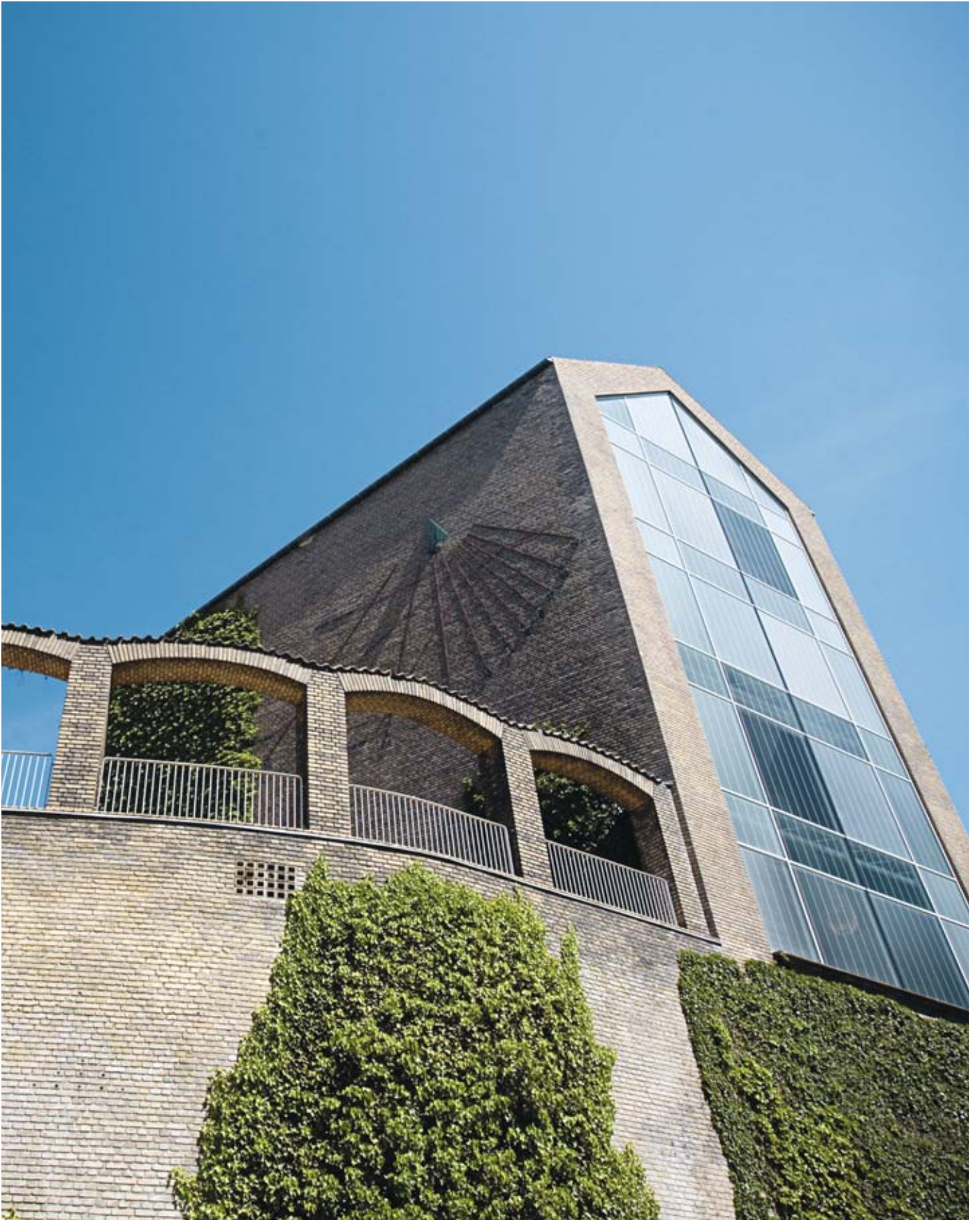
Verena Diel and Tilmann Habermas, Goethe University, Frankfurt, Germany
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Autobiographical memory as memory for events of one's life is characterised by specificity in time and place, personal significance, and strong relations to emotions and the self. We test the hypothesis of a growing semantic and decreasing episodic nature of autobiographical memory across the life span with entire life narratives. We coded a total of 230 life narratives from age groups 8, 12, 16, 20, 40, and 65 years from two different samples. We explored how specific and detailed memories are and how emotional their verbal presentation is. We expect a higher proportion of semantic versus episodic memory in the narratives of the older age groups. Accordingly, with increasing age the life narratives should be less specific, less detailed, and contain fewer emotions. Methodological considerations and age-related decline of autobiographical memory will be discussed.

214 **Positive and negative experiences in relation to bereavement outcome following the loss of a spouse in old age**

Maja O'Connor, Department of Psychology, Aarhus University, Denmark,
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This study explored the association between positive and negative experiences in relation to a specific major life event - the loss of a spouse in old age - and psychological distress and satisfaction with life following the loss. Participants (112 men and 184 women, mean age 73 yrs, range: 65-80) completed standardized questionnaires including measures of post-traumatic stress, depression and satisfaction with life at baseline, 2 month post-bereavement and at follow-up 6, 13 and 18 months post loss. At baseline participants also reported the most positive and the most negative experience in relation to the loss. Those reporting a positive experience (n=198) had significantly higher life-satisfaction at 6 and 18 months follow-up than those who did not. Those reporting a negative experience (n=264) showed significantly higher levels of posttraumatic stress and depression at baseline and more post-traumatic distress at 6 months than those who did not. Findings suggest that positive and



negative experiences predicts different types of bereavement outcome, and indicate that positive and negative experiences may be two markedly different phenomena also when related to the same objective event.

Clinical aspects of autobiographical memory

Poster no.:

215 **Delay-onset of posttraumatic memories related to war**

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Delay-onset theory (review: Hiskey, Luckie, Davies and Brewin, 2008) underlines the emergence of posttraumatic distress years after traumatic events whereas no distress was observed before. The aim of the study is to determine the nature of triggering events of delayed traumatic responses over the lifetime in a population of child survivors of the Holocaust. **Methods:** Open life interviews of 40 Jewish hidden child survivors of the Holocaust (18 women and 22 men). Qualitative open interviews were systematically investigated in term of traumatic delay-onset. **Results:** Four different kinds of reminders were observed as triggering a traumatic response: separations (52.5%), recall of a specific memory (35%), age of offsprings (20%) and social sharing of traumatic memories (17.5%). **Discussion:** Particular post events awake the recall of past memories which therefore acquire a traumatic meaning and lead to posttraumatic symptoms.

216 **Cognitive vulnerability in bipolar disorder**

Inês Ramos and Victor Cláudio (Instituto Superior de Psicologia Aplicada)

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This study analyses the cognitive differences, concerning to memory, between subjects suffering from bipolar disorder in comparison to individuals without psychopathological symptoms. **Methodology** – The instruments applied were: Autobiographical Memory Task, The Beck Depression Inventory, The Hamilton Rating Scale for Depression, The Hypomania Check-list, State-Trait Anxiety Inventory, and Positive and Negative Affect Schedule. The instruments were applied to all of the subjects, a group of 15 individuals with bipolar disorder, and a group of 15 individuals without psychopathological symptoms. **Conclusion** – There were found some differences between the groups. The subjects with bipolar disorder presented more negative and general memories, and the non-bipolar group evoked more positive and extended memories.

- 217 **Seeing red: Trait aggression increases recall of negative, specific autobiographical memories**
Shri Cameron-Shaw, Barbara Dritschel, University of St. Andrews, Martin Campbell, University of St. Andrews, Malcolm Cook, University of Abertay, Dundee
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This study investigated aggression, rumination and negative mood influences on autobiographical memory specificity. Some populations, i.e. depression and trauma, show difficulty in retrieving event-specific autobiographical memories. Current explanations suggest that emotionally sensitive individuals may preferentially avoid specific memories in order to regulate negative emotions, with rumination mediating this relationship. Rumination, however, is also present in clinically pathologies that do not show this bias, e.g. anxiety. It may be that, as emerging research implies, the functionality of this bias differs according to specific populations. Aggression is associated with increased emotional sensitivity and rumination. Despite this, no previous studies have explored inter-relationships between aggression, memory specificity and rumination. 44 non-clinical participants completed questionnaires and an autobiographical memory test. Findings indicated high aggression ratings were associated with frequent recall of negative specific memories, and reduced ruminative brooding. Results imply not all types of emotional sensitivity relate to difficulty in recalling specific memories.

- 218 **The relation between autobiographical memory, maladaptive schemas and major depression**
Victor Cláudio (ISPA/UIPES),
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In this study, supported in a cognitive framework, we relate the characteristics and contents of memories evoked in an Autobiographical Memory task, with the 16 maladaptive schemas, in two groups with emotional disorders - major depression and panic - and one group without psychopathology. We evaluate a total of 42 major depressed individuals compared with 28 panics individuals and 51 individuals without psychopathological disorder. We also evaluate 30 major depressed individuals in two moments with three months interval to control depression severity. We used an Autobiographical Memory Task, the Schemas Questionnaire, and different scales to evaluate depression and anxiety. The results indicate a more significant influence of some maladaptive schemas on the characteristics and contents of autobiographical memories evoked by depressed individuals. We underline the importance of the maladaptive schemas in the process of codification and evocation of autobiographical memories.

- 219 **Schemas and their relation to different types of childhood autobiographical memories**
[João Garcez Aurélio](#) (UIPES – Health and Psychology Research Unit), [Victor Cláudio](#) (UIPES and ISPA – Instituto Superior de Psicologia Aplicada)
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The objective of this study was to ascertain whether a relation exists between the type of childhood memory remembered (categorical, extended or specific) and the individual's dominant type of schemas. The results of two groups – one with fifteen subjects without a previous history of psychopathology and the other composed of fifteen subjects with a diagnosis of major depression – were compared using an Autobiographical Memory Task and Young's Schema Questionnaire.

The results and differences were explained in light of recent literature.

- 220 **Autobiographical memory retrieval in Parkinson's disease: Effects of cueing**
[Smith, S.J.](#), [Conway, M.A.](#), and [Souchay, C.](#), The University of Leeds
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Parkinson's disease (PD) patients have difficulties retrieving specific autobiographical memories (AMs) (Smith et al., 2009). This study aimed to establish whether cueing at retrieval improves AM performance. Sixteen PD patients and sixteen older adult controls (OACs) completed a two part AM task. In part one participants recalled AMs from 5 specified lifetime periods, and gave each AM an identifying title e.g. "A very windy day". After a delay, in part two participants were given a free recall period to retrieve the AMs recalled in part one. Participants' retrieval was then cued by lifetime period, and then cued by the identifying titles. After the delay both groups retrieved fewer AMs than recalled in part one, although the PD patients had significant deficits. OACs retrieval improved when cued by lifetime period. The PD group only benefited from being cued by identifying titles. The results are discussed with reference to retrieval deficits.

Phenomenological qualities of autobiographical memory

Poster no.:

- 221 **Non-believed memories**
[Giuliana Mazzoni](#), University of Hull, [Alan Scoboria](#), University of Windsor
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Rare albeit intriguing anecdotes about vivid memories for events that did not occur, such as Piaget's memory of an attempted abduction that never happened, raise questions about the relationship between beliefs and recollection in autobiographical memory. We present the first empirical study of the existence of vivid autobiographical memories

for events people no longer believe happened to them. The results of our study show that non-believed memories are much more frequent than expected, and illustrate how non-believed memories share many of the recollective qualities of believed memories, while at the same time being considered less 'personal'. The results have important implications for the way autobiographical memory is conceptualized and for the false memory debate.

222 **A new topic for autobiographical memory research, not for spiritual secularization: Momentary life review**

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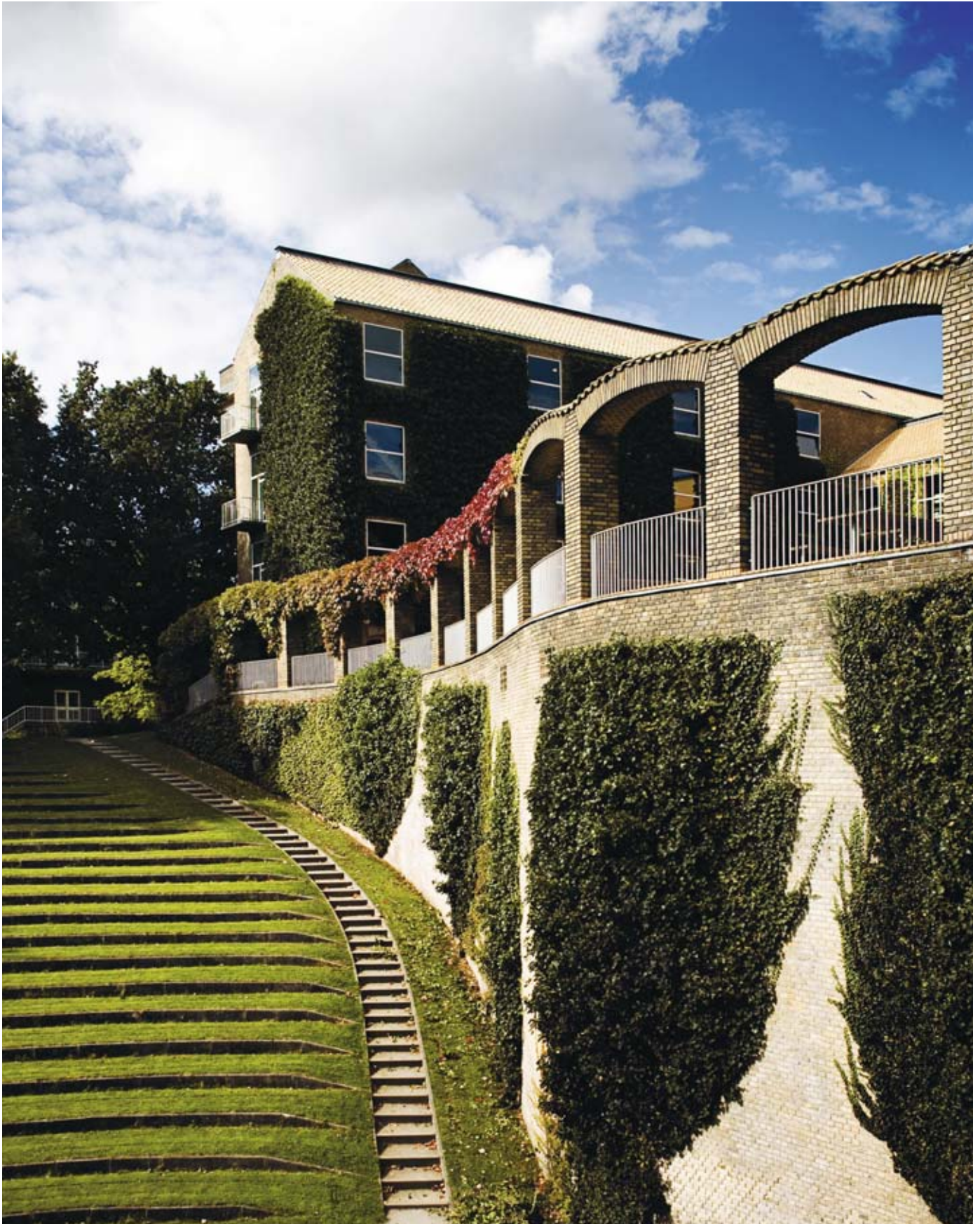
The field of AM was expanded by such phenomenon as general memories (Conway), life scripts (Rubin& Berntsen), self-defining memories (Singer& Salovey) etc. In my opinion, the list of AM topics is still far from complete. I suggest that an exciting phenomenon commonly described as "all life has flown before eyes" is a good candidate for the research. More than 30 years "momentary life review" is seen as the mystical aspect found in "near-death experience". In contrast I discuss the rationale and results of investigating "momentary life review" as a result of AM functioning. Recently we have simulated this state of mind by an innovative technique of Simultaneous Audio-presentation of Person-changing Memories (SAPM). The majority of participants in the study (45) reported experiencing a panoramic representation of memories. We have noticed an increase in self-reported personal integrity and a decrease in symptoms of depression resulting from the SAPM method application.

223 **Repeated retrieval slows shift from first- to third-person perspective**

Heather J. Rice¹, Andrew C. Butler², and Henry L. Roediger, III¹

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Recent autobiographical memories are generally recalled from a first-person perspective whereas remote memories are generally recalled from a third-person perspective. We examined two explanations for this finding: 1) repeated retrieval changes the memory thereby shifting perspective, or 2) the forgetting of information over time leads to reconstruction from a third-person perspective. Participants nominated 10 recent events using a Galton-Crovitz paradigm and experienced 10 mini-events, then rated the perspective experienced during retrieval for each event. Once a week for the next three weeks, they retrieved half of these events: 5 cue-word events and 5 mini-events. During a final session, participants re-rated perspective for every event. First-person perspective ratings decreased more for non-retrieved events than for retrieved events. However, third-person ratings did not differ as a function of retrieval condition. Results suggest that retrieval slows, rather than produces, the shift from first- to third-person perspective.



- 224 **Comparison of involuntary and voluntary memory characteristics in a laboratory setting**
Kyoko KAWAHIRA (Graduate School of Nihon University), Yukio ITSUKUSHIMA (Nihon University)
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This study aimed to clarify features of involuntary memories that are elicited by sensory stimulations. Previous studies in which a diary method was used suggested that involuntary memory features elicited by sensory stimulations were different from the features that were not elicited by sensory stimulations (Kawahira, 2005; Kawahira & Itsukushima, 2006). In this study, involuntary memories were compared with voluntary memories in order to clarify the differences between both memories more clearly. As is expected, there exist individual differences in their amount of recall when participants are asked to describe their own episodes by a diary method. In this study, therefore, involuntary and voluntary memories were obtained in a laboratory setting. The participants were 21 undergraduate and graduate students ($M=20.88$, $SD=1.52$). 32 cases of voluntary memories were compared with 34 cases of involuntary memories. In the voluntary memory group the events reported by participants were more specific and they recalled them with field view (on point of view see Nigro & Neisser, 1983).

- 225 **On the multiplicity of perspectives in autobiographical remembering: some implications of the independence of field and observer vantage-points**
John Sutton, Macquarie Centre for Cognitive Science, Macquarie University, Sydney, NSW 2109, Australia
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In the study of visuospatial perspectives in autobiographical remembering, Rice and Rubin (2009) argue that first- and third- person (field/observer) perspectives are neither mutually exclusive nor complementary, but independent: I can experience multiple perspectives during a single retrieval episode. The implications unsettle other views about memory perspective. Firstly, some research on vantage-point in traumatic memory and depression neglects this multiplicity, sometimes excluding subjects who report both field and observer vantage-points for the same event. Further, visuospatial and emotional perspectives must be distinguished: an observer visual perspective is not always a form of emotional avoidance. Secondly, cognitive sport psychology often privileges first-person mental rehearsal in memory and imagery: but visuospatial perspective is often confounded with motor or kinesthetic perspective. For certain domains, an external visuospatial perspective assists first-personal immersion in kinesthetic processes. Not only are field and observer perspectives independent: visuospatial perspective generally is independent of emotional and kinesthetic perspectives.

226 Temporal distribution of recollective memory

Steve M. J. Janssen (Duke University, Hokkaido University),

Peggy L. St. Jacques (Duke University), and David C. Rubin (Duke University)

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Personal events from adolescence and early adulthood are more accessible than events from other periods. It is, however, unclear whether or not these highly accessible autobiographical memories are also associated with greater recollection. In this online study, we examined whether autobiographical memories from adolescence and early adulthood are more richly recollected than memories from other lifetime periods. Participants rated personal events that were elicited with cue words on reliving or vividness. Consistent with previous studies, most memories came from the period in which the participants were between 6 and 20 years old. The memories from this period were not relived more or recalled more vividly than memories from other lifetime periods, suggesting that memories of personal events from adolescence are not recollected more richly. Recent events had higher levels of reliving and vividness than remote events, while older adults reported a stronger recollective experience than younger adults.

Memory development from infancy through adolescence

Poster no.:

227 Development of working memory and response inhibition in school-age children: Age and structural organisation issues

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The aim of the study was to examine the development of executive functions in school-age children (n = 239) age 7 to 16 years. First, the effect of age on performance on 6 executive function tasks measuring verbal working memory, visuospatial working memory, and response inhibition was examined. Then, it was investigated whether the indicators of verbal working memory, visuospatial working memory, and response inhibition can be considered to measure the same constructs in children (aged 7 to 12 years) and adolescents (aged 13 to 16 years) using a multi-group confirmatory factor analysis. Results suggested that age was significantly associated with performance on executive function tasks with a relative increase in scores throughout childhood and adolescence. Verbal working memory, visuospatial working memory, and inhibition were found to constitute separable but associated executive functions in childhood and in adolescence.

228 Narratives of Japanese elementary school children about positive and negative events

Oyama, Tomoko and Naka, Makiko (Graduate school of Hokkaido University)

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Emotion plays a crucial role in autobiographical memory. How one talks about emotional events is important not only from a theoretical point of view, but also from a forensic viewpoint. To examine how young children talk about emotional events, 60 Japanese elementary school children (1st-2nd grade, 3rd grade, and 5th grade) participated in this study. Children were individually interviewed for about 30 min. In the interview, they were first asked to nominate one positive and one negative event about which they wanted to talk and then they were asked to talk spontaneously about those events. The amount of information, the type of information, and the number of emotional words children used during the interview were examined. Children talked more about positive events than negative events, and they especially provided more "what they did" information of the positive events. Children used emotionally positive words and negative words to the same degree.

229 A cross-linguistic comparison of source monitoring performance of Turkish-speaking and German-speaking children

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Source monitoring provides a way of investigating the characteristics that give memories their episodic character because it is the quality of having a particular source in the personal past that makes a memory autobiographical (Johnson et al., 1993; Lindsay, 2000). Languages with an evidentiality system specify the modality of knowledge acquisition and they are claimed to create sensitivity in the speakers of these languages to the knowledge source. In our study, we examined this claim through comparing source monitoring abilities of 3- to 5-year-old children speaking the evidential language Turkish (48 children) with those of children speaking the non-evidential language German (48 children). Source monitoring abilities were examined via a stickerbook-source task (reality, internal and external source monitoring); a fact-source task (source of knowledge of external sources) and a tunnel-source task (source of modality). We discuss our findings in terms of their implications for source monitoring and autobiographical memory development.

230 **The development of the understanding of truth and lies from preschoolers to undergraduate students**

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The accuracy of autobiographical memories depends partly on the ability to distinguish truth and lies. The development of the understanding of truth and lies was examined by giving 470 participants four questions about the definitions and consequences of truth and lies. The participants consisted of preschool children (M = 5.1 yrs), third-grade school children (M = 9.5 yrs), fifth-grade school children (M = 11.4 yrs), junior high school students (M = 13.1 yrs), and undergraduate students (M = 19.1 yrs). Preschool children were given an interview, while the other participants were given a questionnaire. Results showed that preschool children could not define truth and lies, whereas older participants were able to define them in terms of facts and beliefs. While discussing the consequences of truth and lies, preschool and elementary school children often referred to "evaluation by authority", whereas older participants tended to refer to "morality", "guilt" and "social relationships".

231 **Remember the first word? A brain-imaging study of memory for words at birth**

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Can infants memorize a specific word already at birth? We used Near-infrared-spectroscopy to evaluate the processing of words in neonates when performing a word-recognition task. We first exposed neonates to a single word and then tested them after a silent interval of 2 minutes. In the test, neonates that hear a novel word showed higher relative concentrations of oxyHb as compared to neonates hearing the familiar word. Differential activation was found in a bilaterally distributed cortical network that involved temporo-parietal and some anterior regions. Additionally, we found that incorporating other speech stimuli in the interval, results in a disruption of recognition in the test. Memory, however, was not affected when the interval was filled with music, suggesting a modular-like interference. These results indicate newborn's ability to memorize words, however, there seems that the traces are too fragile to endure the multiple interfering stimuli that infants constantly receive, preventing its later recognition.

232 **Object function facilitates infants' object individuation in a manual search task**

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A basic requirement for the development of autobiographical memory is the ability to identify and track numerically distinct objects in events, an ability called object individuation. This

study investigates the importance of object function (action-object-outcome relations) on object individuation in infancy. Five experiments examined the ability of 9½- and 12-month-old infants to individuate simple geometric objects in a manual search design. Experiments 1-4 (12-month-olds, N=128) provided several combinations of simple appearance-function relations defined by changes in form and colour (appearance) or objects' ability to make a rattling sound when shaken (function). Only when object function co-varied with the appearance-differences (Exp. 3) were infants able to individuate, suggesting that object function played a facilitating but not a determining role. Data from Experiment 5 with 9½-month-old infants (N=32) support the tentative conclusion that function-facilitated object individuation may be found in younger infants as well.

233 **Cultural life scripts and the development of prospective life stories in children and adolescents**

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This study examines the relationship between the acquisition of cultural life scripts (mental representations of the culturally expected events in a typical life and their age norms, Berntsen & Rubin, 2004), and the ability to produce past and prospective life stories. 162 Danish children (9 to 15 years) produced life scripts, wrote about their past weekend, an imagined future weekend, their past life story, and their imagined future life story. Life scripts were scored for typicality compared to an adult norm. The four stories were scored for coherence. Replicating and expanding on previous findings (Bohn & Berntsen, 2008), life script typicality correlated (controlled for age) positively with past- and future life story coherence, but not with past- or future weekend story coherence. These results provide first evidence that cultural life scripts might be considered the overarching principle for the organisation not only of the remembered past, but also the imagined future.



Aarhus University has 38,000 students and 9,200 members of staff. The budgeted turnover for 2010 amounts to DKK 5.6 billion.

The university's strategy and development contract are available at www.au.dk/en.