

and the effect of intimacy on it through a comparison between the self-reference conditions and other reference conditions (friend reference condition, mother reference condition, and semantic reference condition). In the experiment we employed a mixed design, four (reference conditions: self, friend, mother, semantics) \times 2 (style of response: R response, K response), between-subjects variable was reference condition and within-subjects variable was style of response, the dependent variable was the correct response. The results of the experiment revealed that: (1) There were significant main effects for reference conditions and R/K judgments. The correct R response of friend reference condition, mother reference condition, self-reference condition were significantly higher than that of semantic reference condition, and the correct R response of friend reference condition were significantly higher than that of mother reference condition and semantic reference condition. (2) The correct R response of the high intimacy reference condition was significantly higher than that of the low intimacy reference condition. This study suggest that : (a) Self-reference effect, friend-reference effect, and mother-reference effect existed in the adolescent's memory, and the friend-reference effect is bigger than mother-reference effect, and close to self-reference effect. (b) Intimacy has a positive effect on memory-reference effect, that is to say, the higher intimacy is, and the bigger reference effect is.

Influence of attention and expectation on interrupted timing behaviour

Ruiguang Liu China

Two experiments were conducted to explore the influence of attention, and expectation of a break, on interrupted timing behaviour, and the relationship between duration production, and break position, by using a prospective paradigm and single-task programme. A geometric stimulus was presented on a VGA monitor, moving from the original locus to the final locus on the screen, during which the stimulus was interrupted, and after a few seconds, recovered. Target duration (10s in exp1, 1s-6s in exp2) containing a break was randomly formed. Subjects were asked to produce a duration by pressing the corresponding key, if they felt the time of stimulus moving was proportional to the target duration. The interrupted duration (also called break duration) is the result of subjects' shifting of their attention from temporal processing to non-temporal processing. Break position equal to the waiting duration, reflects subjects' expectation of a break in the timing task of pre-cue offered conditions. By conducting a set of two-, or three-way, repeated analyses of variance on the average of duration estimations and analysing the results, we drew three main conclusions: (1) Attention and expectation of a break are important factors which influence subjects' interrupted timing behaviour; (2) Linear prediction between duration production and break position is not confirmed experimentally; and (3) this study will be important for developing time psychology and understanding of higher cognitive functions in humans.

The effects of aircraft noise on children's memory and attention

Phillip Louw University of the Witwatersrand, South Africa; Joseph Seabi; Kate Cockcroft; Paul Goldschagg

Children have been shown to be particularly vulnerable to the effects of chronic exposure to noise and also aircraft noise. Children attending schools in the vicinity of airports have shown cognitive impairments in reading comprehension, different aspects of memory and attention. This cross-sectional study forms part of a larger longitudinal study conducted at schools in the vicinity of an airport in Durban, South Africa, that was decommissioned and moved. This study aimed to investigate the effects of chronic exposure to aircraft noise on children's memory and attention before the moving of the airport. A purposive sample of 834 grade 5 and 6 learners from five schools in noisy and quiet areas near the airport were assessed on aspects of long-term memory, working memory, prospective memory and attention with standardised tests in a classroom context. The results indicated increases in certain aspects of memory with increased noise which, although unexpected, may prove important in understanding the effects of chronic noise on different memory systems. The results and its implications are discussed in relation to previous studies as well as literature on the effects of noise on memory systems.

Working memory and incidental sequence learning: A fruitful connection?

Markus Martini University of Innsbruck, Austria; Christine Unterrainer University of Innsbruck, Austria; Marco Furtner; Pierre Sachse

Working memory (WM) can be conceptualised as a system that temporarily holds and transforms a limited amount of information, within an activated subset of long-term memory units. Incidental sequence learning can be defined as the process through which we, unintentionally, perceive certain regularities in our environment. There has been great progress in the understanding of basic processes within both domains in the last years, however, interaction between them is poorly understood. The aim is to integrate methodological and theoretical progress within the WM, and the sequence learning research fields. Furthermore, we specify the role of WM within (1) sequence learning, through which connections between content, context and procedures are set into a new structure and integrated into long-term memory and (2) sequence knowledge processes, i.e. retrieval of information from long-term memory.

Short-term retention of information from an emergent-processes perspective

Leh Woon Mak James Cook University, Australia

Postle (2006) proposed that working memory is an emergent property of the mind and the brain. That short-term retention of information is produced when attention is directed to neural areas that represented the particular type(s) of information. These neural areas are the very regions responsible for representing the same information in non-working memory situations, perception included. This view inadvertently includes the idea that information retained in working memory can comprise activated long-term memory. The present paper applied this view of working memory to the interpretation of short-term processing of information in a delay task, in which choices were made conditionally based on the presenting discriminative/cue stimu-

lus-conditional discrimination choice task. Adult humans performed conditional discriminative choices under differing outcome delivery procedures while event-related functional magnetic resonance imaging (fMRI) data were collected. Over the memory delay, retrospective processing of the just-perceived cue stimulus may be more resource demanding. Making the transition from retrospective processing to prospective processing of the anticipated choice and/or expected choice outcome taps into long-term (associative) memory and may thus help to reduce cognitive load. Interestingly, the functional neuroimaging data indicated that delay-period prospective processing of an anticipated choice response relies more on the multiple-demand brain network, whereas prospection of an expected cue-unique choice outcome relies more on the default brain network. These results have implications for the interpretation of short-term activation and processing of information, and its relation (or not) to the explicit direction of attention.

The effect of word semantic transparency on Chinese lexical unitisation: A window into lexical learning and organisation

Leh Woon Mak James Cook University, Australia

Word semantic transparency (ST) refers to the extent that word constituents are semantically transparent (T) or opaque (O) to whole-word meaning. Bimorphemic compound words (compounds) may be fully opaque (OO), partially opaque (TO or OT), or fully transparent (TT). The word-superiority effect (WSE) describes the superior recognition of word constituents in a word, as opposed to a non-word, context. Chinese compounds comprise two written characters with a natural space between compound constituents. It has been shown that Chinese compounds with at least an opaque constituent patterned together and displayed a larger WSE (more word-like) than TT compounds. This corroborated with results obtained with English compounds when a space was artificially inserted between compound constituents. The present study further examined the modulatory effect of ST on the Chinese WSE by transposing the order of constituent characters; the familiar form of the canonical compounds was disrupted, delaying word recognition until at least the initial constituent (now second character) was processed. Expectedly, OO items appeared more word-like than TT items. However, partially opaque items were not as word-like as OO items, especially when the T constituent was the final constituent (now first character). Taken together with previous results, the effect of ST on Chinese whole-word lexical unitisation appears graded but with a bias toward unitisation wherever there is an opaque element. These results provided a window into how lexical learning and representation is sensitive to language-specific, script-related variations.

Working memory: Is it associated with socio-economic status?

Azra Moolla Wits, South Africa; Kate Cockcroft

It is well known that crystallised intelligence measures are highly susceptible to educational, resource, language and socio-economic influences, and that the implications of using these kinds of measures are manifold affecting school and univer-