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COMMENT

The Relation Between Source Memory and Episodic Memory: Comment on Siedlecki et al. (2005)

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On the basis of an interesting structural equation analysis, K. L. Siedlecki, T. A. Salthouse, and D. E. Berish (2005) argued that "it may not be meaningful to refer to source memory as a construct distinct from episodic memory" (p. 31). This commentary highlights that this same point could also be made on conceptual grounds. To suggest that source and episodic memory are distinct concepts would confound tasks with theoretical constructs. All episodic tasks involve making attributions about the origin of mental experiences (source monitoring). Conversely, source memory tasks are designed to investigate episodic memory. No task is special, but each may be useful, depending on the focus of interest.

Keywords: source memory, episodic memory, source monitoring framework

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There has been considerable interest over the last few decades in the nature of source memory (e.g., Johnson & Raye, 1981) and age-related changes in memory for source (e.g., Spencer & Raz, 1994). There are now many studies showing age-related changes in source memory, which are sometimes correlated and sometimes uncorrelated with memory for content in the same task. Results from studies reporting correlations between source memory and other cognitive tasks (memory tasks, executive tasks, etc.) have also been variable. For example, for older adults, Glisky, Polster, and Routhieaux (1995) found a positive correlation between scores on a composite battery of neuropsychological tasks intended to measure frontal functioning (i.e., executive tasks) and source memory but not between a composite battery of tasks thought to measure medial-temporal lobe functioning (i.e., episodic memory tasks) and source memory. On the other hand, Henkel, Johnson, and De Leonardis (1998) and Mather, Johnson, and De Leonardis (1999) found correlations between both of Glisky et al.'s batteries and source performance of older adults under some circumstances.

Why does the relationship between measures of source memory and other memory measures (e.g., item memory, other episodic tasks, executive tasks) appear so variable? From the perspective of the source monitoring framework (SMF, e.g., Johnson, Hashtroudi, & Lindsay, 1993; Johnson & Raye, 1981, 1998, 2000; Mitchell & Johnson, 2000), the answer to this question is grounded in the idea that all cognitive tasks recruit from the same set of component cognitive processes. When two tasks recruit mostly the same subset of processes, then they are likely to be correlated. When they recruit a different subset of processes, performance on the two tasks may be uncorrelated. Because of the complexity of many of the cognitive tasks used, the precise constellation of component processes involved often remains unspecified (e.g., Johnson, Raye, Mitchell, Greene, & Anderson, 2003). Even the same task will recruit component processes in varying combinations, depending on the particulars of the various instantiations of the task (e.g., intentional vs. incidental memory, length of list, length of retention interval, amount of interference). Arguing from the SMF perspective, Henkel et al. (1998, especially pp. 262–265) and Mather et al. (1999, especially pp. 452–453) suggested that because source memory depends on feature binding during encoding, and access and evaluation processes during remembering, it is not surprising that there would be correlations between source memory and other episodic and executive tasks that presumably involve some of the same processes that subserve source memory (see also Johnson et al., 1993).

Using an unusually large sample of tasks and participants (330 individuals between the ages of 18 and 89), Siedlecki, Salthouse, and Berish (2005) provided new evidence consistent with such a common component processes view. They investigated four different source tasks (participants identified the color of recalled words; whether action labels referred to actions previously performed by the participant, imagined by the participant, performed by the experimenter, or were new; which quadrant pictures had been presented in or whether they were new; and whether statements had been presented as true/male speaker, false/female speaker, or were new) and a wide range of other cognitive tasks, which Siedlecki et al. grouped into five categories (episodic memory, fluid ability, perceptual speed, executive functioning, and vocabulary). Their main findings were (a) positive correlations among the source measures and (b) age-related decrements in source memory that were associated with age-related decrements in the other classes of tasks investigated (with the exception of vocabulary). After taking into account variance associated with these other tasks, they found no significant source of variance unique to the source tasks contributing to age-related differences. This pattern is consistent with the idea that source memory reflects

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a combination of cognitive processes that are not unique to source memory (Johnson, 1992; Johnson et al., 1993). In addition, source and content memory measures derived from the same tasks were positively correlated and showed similar age-related decreases. Consistent with the SMF, this argues against a sharp theoretical distinction between item memory and memory for other features (e.g., Johnson et al., 1993, p. 18; Mitchell & Johnson, 2000, p. 185; see also; Banks, 2000; Rotello, Macmillan, & Reeder, 2004; see, e.g., Chalfonte & Johnson, 1996, for a similar discussion regarding the conceptual distinction). It should be noted that even in models that posit a sharp distinction between item and source memory, with source memory based on an all-or-none recollection process (Yonelinas, 1999), the degree to which source and item memory is expected to be correlated in any particular situation should depend on the extent to which people are basing old–new item recognition responses on recollection rather than familiarity. (Along these lines, Siedlecki et al. (2005) note that in their color word task, participants may have been trying to remember both word and color in the word recall phase of the task.)

I would especially like to comment on their conclusion that "it may not be meaningful to refer to source memory as a construct distinct from episodic memory [and] there may be nothing special about the aging of source memory" (Siedlecki et al., 2005, p. 31). This implies that source memory and episodic memory have been proposed to be different conceptual or theoretical categories. This confounds tasks with theoretical concepts. To be sure, the typical recall, cued-recall, and recognition experimental tasks that came to be called *episodic memory* tasks (e.g., Tulving, 1983) are not exactly the same as the source identification, reality monitoring, misleading question, false-fame, Deese–Roediger–McDermott, cryptomnesia, and so forth, tasks that came to be called *source monitoring* tasks (e.g., Johnson et al., 1993). However, as I have noted in other contexts, episodic memory tasks all have a source monitoring component (e.g., "What items do you remember from the experimental context?"), and source monitoring tasks are used to explicate episodic memory (e.g., Johnson et al., 1993; Mitchell & Johnson, 2000). Thus, from the perspective of the SMF, source memory tasks are not designed to investigate a different "animal" than other episodic memory tasks. Source memory tasks provide a way of investigating the features or qualities that give memories their episodic character in our phenomenal experience, the binding (associative, organizational) processes that hold features together, and the access and evaluation processes that take mental experiences to be representations of past events. The SMF (as distinct from any particular task involving source monitoring) proposes that an explication of episodic memory involves understanding a collection of cognitive processes, none of which are presumed to be unique to any particular episodic memory task.

It is worth considering, at any point in history, why any task might seem special. Paired associates compared with serial learning? Prose recall compared with paired associates? Reality/source monitoring compared with prose recall? New tasks sometimes provide new purchase on old problems (or revive interest, if nothing else), or new tasks may highlight previously unexplored aspects of problems. For example, although associative, organizational, and retrieval processes (e.g., explored in the context of phenomena such as interference and encoding specificity effects) received considerable attention before investigations of episodic memory framed in terms of reality/source monitoring, it is probably fair to say that evaluation processes did not. Thus, a theoretical contribution of the reality/source monitoring approach is that it helped reconceptualize memory as involving an attribution about mental experiences rather than simply a revival of a stored representation. Of course, explicit source identification tasks had been used before (e.g., list discrimination; Hintzman, Block, & Inskeep, 1972; Winograd, 1968), and false memories (i.e., failures in source monitoring) had been demonstrated before (e.g., Bartlett, 1932; Deese, 1959; Johnson, Bransford, & Solomon, 1973; Underwood, 1965). The source monitoring approach builds on these and other earlier observations. An attractive feature of exploring source memory processes and failures in source memory is that it highlights the many facets of the problem of episodic memory. In addition, theorizing that attempts to integrate findings from many tasks into a broader perspective encourages researchers to see new domains of relevance in which basic principles operate (e.g., eyewitness testimony, recovered memories, cryptomnesia, clinical confabulations and delusions, maintenance of stereotypes, choice-supportive memory distortion).

In reviewing manuscripts, I often find myself making an argument similar to that implied by Siedlecki et al. (2005). We should not need a new theory for each new task (e.g., a theory of perceived/imagined tasks, a theory of misleading question tasks, a theory of Deese–Roediger–McDermott tasks). Rather, more progress is likely from explicating and clarifying the common mechanisms operating across tasks and the differential weighting of these common processes in different tasks (the SMF is one example of an evolving framework for doing so). Both experimental and individual difference approaches can contribute to this goal. If experimental approaches stay alert to commonalities across tasks (and are not satisfied with local theories of very specific tasks), and individual difference approaches stay alert to components that may be represented in their latent variables (and are not satisfied with global explanatory constructs like episodic memory and executive function; also, see Salthouse, Atkinson, & Berish, 2003), these approaches should converge on a cumulative and cohesive picture of cognitive function.

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