Abstract: Although Freud's merits may be readily acknowledged in the year of his 150th birthday, recent findings on repression-related phenomena cannot be accommodated by his classic conception, on which Erdelyi's theory is built. This point is illustrated by discussing the role of inhibitory processes. The unified theory of repression should be elaborated to generate falsifiable predictions on the reported phenomena.

Although we welcome Erdelyi's endeavor to integrate insights from different clinical and laboratory traditions into a unified theory of repression, we consider that the framework he proposes should be elaborated in ways that lead beyond Freud's classic conception. Building on Freud's distinction between repression in the narrow sense and repression in the widest sense (Freud 1937/1964), Erdelyi proposes that repression is divided into two subclasses, *inhibitory (or simple) repression* and *elaborative repression*. He affirms that these two subclasses of "consciousness-lowering processes" are "extensively buttressed ... by the experimental literature." Inhibition consists on the mental level in "cognitive avoidance (not-thinking)" or "subtract[ion of] attentional allocation" that results in "degrading the 'signal'" (sect. 3.1). For the underlying mechanisms, a parallel is drawn between inhibition and the functioning of inhibitory circuits in the brain.

Appealing as it may appear with its neural nimbus, the concept of inhibition is far from being unanimously accepted in cognitive psychology: in fact, it has been seriously challenged from different sides. The most fundamental challenge has come from authors who have gone so far as to question the "right of existence" of this concept; they propose that experimental effects generally attributed to inhibition are amenable to alternative explanations. MacLeod et al. (2003), for example, offer such "inhibition-free explanations" for results typically obtained with the directed forgetting (DF) and the retrieval-induced forgetting (RIF) paradigms. MacLeod et al. mention, among the candidate mechanisms that may replace inhibition, selective rehearsal (for DF) and retrieval strategy disruption (for RIF). Erdelyi invokes the results typically obtained with these paradigms as evidence in support of the notion of inhibitory repression; at the same time, he surmises that mechanisms such as selective rehearsal and selective search might also be tapped by these tasks. In this respect, his theory must be qualified as underdetermined: It specifies neither the conditions in which the different mechanisms are called upon, nor their possible interaction, nor the reasons that an inhibition-involving account is superior to an inhibition-free account.

In a similar vein, the literature on thought suppression (for a review, see Wenzlaff & Wegner 2000) that Erdelyi briefly mentions suggests that mental control may be modeled without recourse to the concept of inhibition. The leading theoretical account in this field, Wegner's ironic process theory (Wegner 1994), posits an interaction between an effortful intentional operating process that seeks distracters (thoughts other than the to-be-suppressed target) and a less effortful ironic monitoring process that watches for intrusions of the target in order to alert the first process of the need to renew distractions. The post-suppression rebound of the target is explained by the fact that when the operating process is voluntarily relinquished or disrupted by cognitive demands (or resource depletion as during sleep; Schmidt & Gendolla 2006; Wegner et al. 2004), the monitoring process continues its vigilance for unwanted thoughts, thereby enhancing their activation. By this view, suppression implies a mechanism of selective attention, but not necessarily one of inhibition (for a similar position, see Engle 2000).

Another challenge for inhibition has come from studies showing that this concept rests on a fragile empirical foundation. For example, Salthouse et al. (2006) have recently examined six tasks that are often interpreted in terms of inhibition-related memory control; among them were, again, DF and RIF tasks. Analysis of the relations between the variables derived from these tasks did not yield any significant sign of convergent validity for one or more memory-control constructs. Even though this finding may be ascribed to the poor reliability of the memory-control measures used, it constitutes a serious challenge to any inhibition-related repression account. Investigations of the neural substrates of inhibition have not produced unequivocal evidence for this mechanism either. For example, Collette et al. (2005) conducted a study using positron emission tomography to explore the cerebral areas associated with three executive functions: updating, shifting, and inhibition. Although some regional activation patterns were common to all three functions, only a weak inhibition-specific activation was found in the right inferior frontal region. This finding may again fuel doubts as to the validity of the inhibition construct.

Critical comments about the concept of inhibition have also been made by authors who generally adhere to it; they suggest that inhibition should be conceived of as a multidimensional construct rather than as a unitary one. Friedman and Miyake (2004), for example, examined the relations between three inhibition-related functions. They found that prepotent response inhibition and resistance to distracter interference were closely related and that both were unrelated to resistance to proactive interference. In a structural equation model, these investigators combined prepotent response inhibition and resistance to distracter interference into a single latent variable and observed that it was related to everyday cognitive failures; unwanted intrusive thoughts, on the other hand, were related to resistance to proactive interference. This result highlights the interest of establishing a taxonomy of inhibition-related functions – a theoretical refinement that lacks in the unified theory of repression. Erdelyi conjectures that repression "knocks out declarative (conscious) memories" and may affect nondeclarative representations (e.g., procedural ones) in a different way, but he does not take the step of distinguishing two or more different inhibitory functions. Whether unwanted intrusive thoughts or everyday cognitive failures (slips according to the Freudian terminology) are concerned, the inhibitory mechanism acting upon them is thus thought to be the same.

In light of the reported findings and theoretical accounts, we suggest that the unified theory of repression should be elaborated to be more specific about the implication of inhibitory processes. First, it should be made clear whether the term *inhibition* refers to a mental operation ("not-thinking of something") or to a cognitive mechanism that is supposed to explain behavior; this distinction is not always neatly drawn in Erdelyi's article. Second, if a cognitive mechanism of inhibition is postulated, arguments for the superiority of such an account over an inhibition-free account of repression should be provided. And third, the concept of cognitive inhibition should be broken down in terms of separable functions. It is our belief that these suggestions could lead to the generation of novel, testable, and thereby falsifiable hypotheses about repression.

Repression and dreaming: An open empirical question

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Abstract: From the perspective of modern dream research, Freud's hypotheses regarding repression and dreaming are difficult to evaluate. Several studies indicate that it is possible to study these topics empirically, but it needs a lot more empirical evidence, at least in the area of dream research, before arriving at a unified theory of repression.

From the perspective of modern dream research, Freud's hypotheses regarding repression and dreaming are difficult to

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evaluate. Since Erdelyi makes several references to Freud's dream theory (e.g., dream work as example of elaborate repression processes), it seems important to discuss this topic.

Freud (1900/1987) hypothesized that dreams with unsuccessfully concealed wishes are repressed (not remembered) as a whole. This hypothesis, however, cannot be tested empirically since the repressed dream is not available and cannot be compared to recalled dreams. Indirect approaches linking trait repression to dream recall frequency have not been successful; most studies did not find a significant relationship (for an overview, see Schredl & Montasser 1996–97).

Similarly, the processes of rationalization, symbolization, projection, reversal, and displacement, as a set of techniques by which the latent dream content is transformed into the manifest content, cannot be tested in a direct way, because the latent content is a theoretical construct and, therefore, not observable. Freud's clinical practice (i.e., starting from the manifest dream and working through to the hypothesized latent meaning) does not suffice modern scientific standards. It is important to complement this approach with empirical studies, an issue which is stressed by Erdelyi several times. Most dream content research has been carried out under the premise of the continuity hypothesis of dreaming (cf. Schredl 2003), which – in its general form – simply states that waking life is reflected in dreams. Factors that might be important in explaining the incorporation of waking-life events (or thoughts, emotions, concerns) into dreams, such as emotional involvement, have also been proposed (Schredl 2003). Schredl and Hofmann (2003), for example, reported that the amount of time driving a car is positively related to the frequency of driving dreams. Another finding is that depressive mood is correlated with negatively toned dreams and dream themes of death and aggression (Schredl & Engelhardt 2001). These straightforward effects of waking life on subsequent dreams have also been acknowledged by Freud (1900/1987) as day residues. Although these kinds of paradigms are easily put into research practice and, hence, empirical evidence is accumulating, more sophisticated approaches to test Freudian notions have rarely been carried out. Cartwright et al. (1969) showed an erotic movie to 10 young men and found more male sex symbols (gun, knife, tool, golf club) and female sex symbols (box, tunnel, corridor) in the dreams after the film (but not more direct incorporations of the film), a finding that was interpreted as occurrence of symbolization within these dreams.

Wegner et al. (2004) applied a simple suppression strategy ("Do not think about this person") prior to bedtime and found a higher incorporation rate of the target person (34.1%) than after the expression condition (thinking about the person the same amount of time prior to bedtime; 28.2%). Although this procedure might not be called complete repression (the target person occurred on average about three times within the 5-minute stream-of-consciousness report), the authors clearly demonstrated that hypotheses concerning repression and dreaming can be studied empirically. It might be possible to study whether repressed thoughts in everyday life are also often incorporated in dreams.

Erdelyi mentions two studies (Pötzl 1917; Fisher 1956) regarding the effects of subliminal presented stimuli on dreams. Although there are studies clearly demonstrating effects of subliminal perception on the organism (e.g., fear reactions in patients with spider phobia) even if they were not able to recognize the pictures presented for a very short time (Öhman & Soares 1994), the studies mentioned by Erdelyi have several methodological flaws (no control condition, a vague interpretation of coincidences between dream drawings and original picture, tachistoscopic presentation [ignoring the iconic memory]). A more sophisticated study (Schredl et al. 1999) using masking procedures for presentation the target pictures, a control condition, and precisely defined rating scales for the analysis of the pictures, also found an effect of subliminal stimuli on subsequent dreams (increased number of objects and concepts represented in the pictures). Because of the small sample size, further corroboration of these findings is necessary.

To summarize, Erdelyi's undertaking to present clear definitions of repression and repression processes is a fruitful one for future research; but it needs a lot more empirical evidence, at least in the area of dream research, before arriving at a unified theory of repression.

The mnemic neglect model: Experimental demonstrations of inhibitory repression in normal adults

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Abstract: Normal adults recall poorly social feedback that refers to them, is negative, and pertains to core self-aspects. This phenomenon, dubbed the *mnemic neglect effect*, is equivalent to inhibitory repression. It is instigated under conditions of high self-threat, it implicates not-thinking during encoding, and it involves memories that are recoverable with such techniques as recognition accuracy.

In a laboratory program of research, Sedikides and Green (2000) have demonstrated what is in essence inhibitory repression in normal adults. Our starting point was the assumption that people receive mixed (i.e., positive and negative) feedback in their daily lives. For example, an employer may praise them for the completion of a project but point out that the outcome could have been more successful. A friend may remark that she values their dependability but not their fashion sense. A partner may exalt them as a lover but lament their hygiene habits. How do people process mixed feedback? Does it matter if the same feedback refers to the self as opposed to another person? Stated differently, do people process and remember self-referent feedback differently than other-referent feedback? More interestingly, how do people defend the self (compared to another person) from threatening information?

We introduced the *mnemic neglect model* (Sedikides et al. 2004) to address these issues. The model endorses the notion that people are motivated to defend, maintain, or increase the positivity of the self-concept (Sedikides & Gregg 2003; Sedikides & Strube 1997). In addition, the model draws a distinction between negative versus positive feedback, central (i.e., pertaining to relatively high certainty, descriptiveness, and importance self-aspects) versus peripheral (i.e., pertaining to relatively low certainty, descriptiveness, and importance self-aspects) feedback, and self- versus other-referent feedback (Sedikides 1993; 1995). Negative, central, and self-referent feedback is *self-threatening*. The other categories of feedback are either *low self-threat* (i.e., positive central self-referent, positive central other-referent, negative central other-referent) or *tangential* to the self (i.e., positive peripheral self-referent, negative peripheral self-referent, positive peripheral other-referent, negative peripheral other-referent).

The model posits that people neglect disproportionately the processing of self-threatening feedback. Such feedback (e.g., "You would purposely hurt someone to benefit yourself") is inconsistent with one's self-view (e.g., kind), and one cannot imagine behaving in such a rude manner. Thus, self-threatening feedback is processed shallowly. Little, if any, elaboration (i.e., association with similar behaviors) occurs, resulting in a decreased number of retrieval routes and, hence, poor recall. In contrast, low self-threat feedback (e.g., "You would offer to