

Towards a post-Freudian theory of repression: Reflections on the role of inhibitory functions

Ralph E. Schmidt, Martial Van der Linden

Department of Psychology, University of Geneva, Geneva, 1205, Switzerland.

KEYWORDS: brain cortex, cognitive defect, concentration loss, consciousness, defense mechanism, inhibition (psychology), memory consolidation, prediction, psychoanalytic theory, reliability, self-concept, task performance, thought disorder

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.

Bibliography

Collette, F., van der Linden, M., Laureys, S., Delfiore, G., Degueldre, C., Luxen, A., & Salmon, E. (2005) *Exploring the unity and diversity of the neural substrates of executive functioning. Human Brain Mapping* 25:409–23.

Engle, R. W. (2000) *What is working memory capacity? In: The nature of remembering: Essays in honor of Robert G. Crowder*, ed. H. L. Roediger, J. S. Nairne, I. Neath & A. M. Suprenant, pp. 297–314. American Psychological Association.

Freud, S. (1933/1964) *New introductory lectures on psycho-analysis. In: The standard edition of the complete psychological works of Sigmund Freud*, vol. 22, trans. ed. J. Strachey, pp. 1–158. Hogarth Press.

Friedman, N. P. & Miyake, A. (2004) *The relations among inhibition and interference control functions: A latent-variable analysis. Journal of Experimental Psychology: General* 133:101–35.

Salthouse, T. A., Siedlecki, K. L. & Krueger, L. E. (2006) *An individual differences analysis of memory control. Journal of Memory and Language*, 55:102–25.

Schmidt, R. E. & Gendolla, G. H. E. (2006) *Hypnagogic upheaval: The return of a suppressed thought at sleep-onset. Paper presented at the symposium, When thoughts run out of control: The vicissitudes of falling asleep (R. E. Schmidt, Chair). Conducted at the 18th Annual Convention of the Association for Psychological Science, New York, May 2006.*

Wegner, D. M. (1994) Ironic processes of mental control. Psychological Review 101:34–52.

Wegner, D. M., Wenzlaff, R. M. & Kozak, M. (2004) Dream rebound: The return of suppressed thoughts in dreams. Psychological Science, 15:232–36.

Wenzlaff, R. M. & Wegner, D. M. (2000) Thought suppression. Annual Review of Psychology 51:59–91.