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Already Filtered: Affective Immersion and Personality Differences in Accessing Present and Past

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Schemas contribute to adaptation, filtering novelty though knowledge-expectancy structures, the residue of past contingencies and their consequences. Adaptation requires a balance between flexible, dynamic context-sensitivity and the cognitive efficiency that schemas afford in promoting persistent goal pursuit despite distraction. Affects can form and disrupt schemas. Transient affective experiences systematically alter selectivity of attentiveness to the directly experienced present environment, the internal environment, and to the stored experiences of memory. Enduring personal stylistic predispositions, like implicit motives and affective schemas, influence how experience is perceived, responded to, and integrated; they shape memory and influence present experiential patterns, individually and intersubjectively. Such systematic influences are potential sources of error in the study of memory if not mapped; so far, individual personality differences have just been a source of complication in the literature on emotion-congruent perception and memory. I synthesize what findings there are about how personality differences, emotions, and affects contribute to the structuring and integration of perceptions and memories both directly and by way of hot, affectively-anchored schemas. Case studies from experimental and personality psychology highlight a conception of personality and affective experience relevant to memory research and cognitive science.

Keywords: Personality; Schemas; Affects; Emotion; Affective Immersion; Autobiographical Memory; Emotion-Congruent Memory

1. Personality, Affect, and Memory

The view of personality presented here is that we are multiply motivated by affects and drives that operate at a subpersonal level. From this perspective, agency is

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not a single thing that we do or don't have, and which philosophical theories seek to describe: it is rather a set of interacting dimensions on which people differ. A sense of unity or selfhood, if gained at all, is dynamic, cultural, and an achievement of spinning the right narratives. As Dennett (1992) notes: "Our fundamental tactic of self-protection, self-control and self-definition is not spinning webs or building dams but telling stories and more particularly concocting and controlling the stories we tell others—and ourselves—about who we are" (p. 418). Burke (1969) suggests that "trouble drives the drama" of our narratives: trouble that here includes the wetware of our brain and body, of drives and affects. If our perception of world, self and others is always motivated, and multiply so, there is no reason to expect our "wantings" to be in harmony. This conception of personality is represented in the writings of Freud and many more recent psychologists (Block, 2002; Izard, Ackerman, Schoff, & Fine, 2000; Westen, 1985). Here I explore its consequences for personal remembering and narrative structure.

Affects strongly influence what we perceive, what we notice and attend to about the external world (Forgas, 1995; Rusting, 1998) and our *milieu interieur* (Lambie & Marcel, 2002). There are personality differences in the range and intensity of affective experience: people vary on several dimensions of emotional intensity, lability, tendency to experience pleasant and unpleasant emotions, tendency to experience particular affects, consciousness of affective experience, capacity for experiencing ambivalent emotions, and for emotional expression (Westen, Muderrisoglu, Fowler, Shedler, & Koren, 1997). These differences, and abilities and deficits in regulating affect, are powerful constituents of personality style and pathology. So far, individual personality differences have just been a source of complication in the literature on emotion-congruent perception and memory. Over and above the predisposition to experience particular affects at signature ranges of intensity, people vary in the degree to which they regulate and repair their affective states. For instance a person who engages in mood repair via reflective self-awareness may recollect happy experiences to attenuate a depressed mood. These "meta-affective experiences" interface affect, memory, and personality.

Affective and motivational features of personality are powerful determinants of what we do and say and of "what it is like to be us." However, the more biologically anchored aspect of drives and basic affects, their corporeal clout, underdetermines our emotional experience (Lambie & Marcel, 2002). Emotional experience is sculpted not only by processes within us, but also by processes at a social level. While we all have our signature patterns of experiencing affects and motives, they don't remain a personal affair but spiral out into the cultural. As Sue Campbell (1997) has argued, audience uptake is vital for the very formation of affects. If I am not receptive to your anger, I can call you bitter, thus assigning to you "personal responsibility for the failures of public interaction" (p. 175), and deftly turning attention away from a history of past wrongs visited upon you (and perhaps your cultural group) on to personal pathology. If you continue repetitively to protest the inexplicable disappearance of loved ones by walking the streets with their pictures pinned on your chest, this is not merely (or even) a personal pathology (Campbell, 2006). Perhaps there is a failure on the part of the

local (temporal) cultural moment to accept and take up your meanings, to allow you to experience collectively and to recontextualize your suffering in a way that allows you to work through it, or to open it up to flexible and varying significance over varied recollective moments. The collective plays a vital role in individual affective experience and remembering. Affective and motivational features of personality only in part determine emotional experience and the narratives of a culturally embedded self, but they are important and somewhat neglected contributors. They readily accommodate the sociality of affective experience: just as affect is the medium of the social—formative of the connections between people—it is also the connective tissue of thought, schemas and memory.

We form schemas based on affects, and other people are implicated in our affective experience at many levels, even if only as an implied audience. Schemas shape memory directly by influencing recall, and indirectly by influencing what we attend to, encode and store in memory in the first place. Schemas are "organised knowledge structures representing concepts such as situations, objects, events and actions at various levels of abstractness" which permit us to comprehend current input and predict future events (Schutzwohl, 1998, p. 1183). Johnson and Magaro (1987) call them "prototypical abstractions of complex concepts," which "arise from past experiences" and "guide the organisation of incoming information". They "are considered to be organisations of and associations between concepts that guide and direct the encoding of new information," and "the state of the organism with regard to emotional and motivational factors contributes to the likelihood of activation" of schemas (Johnson & Magaro, 1987, p. 33).

Tomkins (1962) suggests that mechanisms like schemas relevant "to sensory information are also relevant with respect to stored information." He notes that there is "an overabundance of stored information which would overwhelm consciousness if it were the direct recipient of all such stored past experiences" (p. 16). Accordingly, processes imposing selectivity of attention and integration to perceptual input from the directly accessible current environment are likely to do the same at the level of accessing and integrating memories. If similar mechanisms structure access to the present and past, their role in consolidating memory and experience is considerable. Individual differences in affective experience, schemas, and motives represent a systematic source of influence that needs to be considered in research on perception and memory, and explicitly to be addressed in research design. Short-term experiences of affective immersion, mood, and schema activation may shape not only access to perceptual experience but also the memories that different individuals can most readily access as part of their narrative. Personality differences and current state of affective immersion afford differential access to present and past.

After a brief consideration of trends in conceptualizing affect, I define how terms like 'affect' and 'emotion' will be used in this paper (as there is little definitional consensus). I explore the effects on attention and learning of general negative and positive affect (since little literature exists regarding the particular consequences of *specific* affects for memory). I consider how individual differences in readiness

of anxiety induction predispose a person to establish more sources of anxiety; the role of neuroticism in similarly rendering threat salient; and, as a counterpoint, the role of positive affect in rendering novel stimuli more readily accessible to working memory. Self-reflective emotions of embarrassment, shame, pride, and guilt are shown to modulate contextually appropriate inhibition of memory report, and to establish inner inhibitions in recognizing our own mental activity. This is illustrated by discussing repressors and such expert suppressors as those with dismissive-avoidant attachment styles. I then use as case studies research that addresses the intrinsic properties of affective predispositions (internal working models and implicit motives) and the role that they play in the structuring of memory. Implicit motives of an agentic or communal kind shape not only whether and what we recall, but the nature of the links we make between memories. A person with a highly agentic implicit motive (with recurring preferences for autonomy, instrumentality, and dominance in relation to others) is likely to list giving a powerful speech as being among her most memorable experiences of the last six weeks, but also to look for more integration among her memories. Little attention has been paid to how such individual differences shape the integration and structuring of memories. Even coherently structured narratives of negative past experiences, I will argue in conclusion, do not prevent the intergenerational transmission of "trouble": the affective valence of a narrative is more powerful than the coherence of narrative integration.

2. Different Trends in Affect and Emotion Research

There are at least three trends in the contemporary literature on affects, emotions, and feelings with differing but complementary emphases on properties of affect and sources of evidence. There is general consensus that affects can influence our cognitive processes at various levels, by way of their valences and arousal properties, and also by way of motivational features and associated cognitive appraisal patterns. The "appraisal" trend assumes that appraisal of a conscious cognitive kind individuates affects and emotions in significant and predictable ways that reveal the centrality to affect of cognition (Lazarus, 1991; Scherer, Dan, & Flykt, 2006). A "core emotions" trend suggests affects can be characterized in terms of valence and arousal (Watson & Tellegen, 1996; see Rusting, 1998). The "basic affects" (or "differential affects") group assumes that affects are neurophysiologically individuated, each capturing face, body, breath and glands in signature ways, and have distinct body-brain underpinnings, as well as unique informational and motivational input to any processes that they accompany or give rise to (Ekman, 1992; Izard, 1991; Izard et al., 2000; Panksepp, 2000; Tomkins, 1962, 1963). They look to experimental psychological and neuropsychological data as evidence for the individuation of affects, and view affect and cognition as separate, interactive systems.

3. Working Definitions of Affects, Emotions, and Feelings

Tomkins (1962) defines affects as:

> A set of muscles or glandular responses located in the face and also widely distributed through the body, which generate sensory feedback which is either inherently "acceptable" or "unacceptable." These organized sets of responses are triggered at subcortical centres where specific programs for each distinct affect are stored. These programs are innately endowed and genetically inherited. When they are activated they can "capture" widely distributed organs such as face, heart and the endocrines, imposing on them a correlated pattern of responses. (p. 243)

His definition still has currency: in his emotion-based approach to robotics, Velasquez (1999) defines affects as "executive, operating systems that generate and coordinate short-term, stereotypical responses that allow organisms to deal with biologically significant events in ways that promote survival" (p. 237). For Velasquez, these responses involve a variety of elements such as facial and behavioral expressions, arousal of the autonomic nervous system (ANS), vocal expressions, modulation of attention and affective feelings.[1]

Contemporary evidence for "differential affects" (to use Izard's (1991) term for basic affects) is provided by Panksepp (2000), who suggests they are "organised homologously in the brain of all mammals, and may generate remarkably similar internal feelings (and affective states) in all of us" (p. 237). They promote action readiness, and mood-congruent cognitive activities.

While it is common in psychology to say that there is no definitional agreement, and therefore to use 'affects', 'emotions', and 'feelings' interchangeably, the term 'affect' is better reserved to denote *primary* affects, individuated at the level of the body (rather than by cognition) with signature patterns of grasping the activity of the body/mind, glands, respiration, and cognition (Panksepp, 2000; Tomkins, 1962, 1963). 'Emotion' might best refer to those modifications of basic affect patterns that, like anxiety, arise as a result of the coassembly (through experience) of affects with cognition. For instance, Tomkins (1995) thought that basic affects could be coassembled in differing ways to produce secondary emotions; e.g., with shyness, shame, and guilt, "the core affect in all three is identical, though the assembled perceptions, cognitions, and intentions may be vastly different" (p. 85). 'Feeling' refers to some of the signature patterns of phenomenological experience (i.e., the feeling of what happens) underdetermined by the biological indices of affective and emotional responses.

4. When is Emotion Likely to Influence Memory?

4.1. *Affect Infusion, Substantive Processing, and Autobiographical Memory*

An affective or emotional state has to be activated for it to make a difference to cognition and recollection. Innes-Ker and Niedenthal (2002) suggest people attend to emotional features of stimuli when they themselves are in emotional states and that

we need to take this seriously rather than just base theories of categorization in terms of perceptual similarity (see also Niedenthal, Halberstadt, & Innes-Ker, 1999). When an affect program is activated, it changes the whole "neurotransmitter soup" that is part of the basis of our cognitions and recollections. One aspect of the causal role of affect is termed "affect infusion," as though it were a fluid, (Forgas, 1995).[2] Affect infusion is the process whereby affectively loaded information exerts an influence on and becomes incorporated into the judgmental process, entering into the judges' deliberations and eventually coloring judgmental outcome (Forgas, 1995). In his multi-level theory of emotion, Forgas (1995) suggests that "affect infusion is most likely to occur in the course of constructive processing that involves the substantial transformation rather than the mere reproduction of existing cognitive representations," since such processing "requires a relatively open information search strategy and a significant degree of generative elaboration" (p. 39). Processes most relevant to autobiographical memory are also those most likely to induce affect-congruent memory processes (Rusting, 1998). These include two mechanisms of affect infusion: one is "affect priming," where affects indirectly influence judgments during substantive processing through selective influence on attention, retrieval and associative processes. The other is "affect-as-information," where affect is a source of information and feelings inform judgments during fast, heuristic processing; this accounts for the effects of emotion at the retrieval or judgment stages. The prototype is mood-influenced memory (Bowers, 1981; Forgas, 2004). Reviewing memory processes in depression and mania, Johnson and Magaro (1987) conclude: "the crucial factor is not diagnostic category but the mood state." They add that "... memories congruent with mood state are more easily recalled than those that are incongruent," thus "individuals characterised by depressed mood demonstrat[e] enhanced recall of negative life events" (p. 36). However, goals such as mood repair can interfere to promote mood incongruent recall. Rusting (1998, p. 170) notes, "individual differences in the use of emotion-regulation strategies" can interfere to wipe out emotion-congruent effects (like selectivity of attention, recall, and memory integration).

4.2. Meta-Affective Influences: Mood-Incongruent Memory and Reflective Style

The manner of attending to mood can also influence whether or not you recollect memories that are congruent with your mood. Ruminative self-focus is characterized by a neurotic tendency to dwell passively on undesirable aspects of one's self, by a sense that one's feelings are threatening, confusing, and inescapable. It is an inclination to focus repetitively on the causes and consequences of one's distress. In contrast, reflective self-focus is characterized by openness to examining various facets of oneself, to exploring negative feelings and a sense that one's feelings are clear and controllable. It also entails a willingness to contemplate strategies for alleviating unpleasant feelings. McFarland and Buehler (1998) found that those who adopted a reflective orientation to their moods engaged in mood-incongruent recall when they

focused on their feelings, and people who adopted a ruminative orientation to their moods engaged in mood-congruent recall.

5. Attention to Novelty and Threat

5.1. General Positive and Negative Affect

Much of the research on memory focuses on general positive or negative affect, mood, and anxiety. The role of specific affects has, as far as I am aware, not yet been studied in detail with regard to attention and memory, a gap in research also bewailed by Levine and Pizarro (2004). Tomkins (1962, 1963) addressed valence and arousal as well as the specific positive affects[3] and specific negative affects.[4] He outlined an intriguing feature at the general level of positive and negative affects. While it is adaptive to get wise quickly to the commonalities of what might hurt you, so that negative affects make us notice analogs (the similarities across various experiences), we might in contrast notice variants (differences in stimuli and contingencies) and be more open to exploration of novelty when in positive affective states. Much contemporary evidence supports this.

5.2. Emotion-Attention Links

5.2.1. Anxiety begets anxiety

Zinbarg and Mohlman (1998) offer "preliminary evidence that trait anxiety is associated with a selective predisposition toward forming aversive associations" (p. 1031). Their results show that a measure of the *sensitivity* of the anxiety system (rather then a person's typical, average anxiety level) correlates significantly with the speed of acquiring punishment expectancies under conditions of ego-threat. Personality differences in anxiety selectively shape attention to negative and threatening environmental features. Those already prone to anxiety are rather more susceptible to, and faster at, developing new sources of anxiety than others.

Similarly, Williams, Mathews, and MacLeod (1996) suggest that people high in neuroticism (high N) are high in threat monitoring, and have an attentional bias towards negative cues of punishment and frustration. They used a version of the Stroop effect modified to study individual differences in attention to emotion words. The subject is asked to name the color of the word, and emotional interference is assumed if it takes longer to name the color of the word when the word is highly emotional in nature. Williams et al. (1996) reviewed more than 50 experiments, and many showed that high-N groups and people with anxiety-disorder are often slower to name colors of anxiety and threat-related words. Westen et al. (1997) outline two accounts of these findings: (a) that the high-emotion words set up ruminative processes in high-N subjects and this consumes their attentional capacity, leaving less for the color-naming tasks; and (b) that it takes cognitive effort to shut out the perception of the threatening words, and that high-N persons thus have fewer resources for the color-naming tasks. Both accounts rely on individual

differences in how attention is allocated to emotion-words, and suggest that attention is seized by the negative words among those high in N.

5.2.2. Positive affect and attention to novelty: cognitive flexibility-distractibility tradeoff
Recent evidence suggests that positive affect influences cognitive control, by modulating the balance between the ability to maintain goals and cognitive sets and the capacity flexibly to *switch* goals and attention. Driesbach and Goschke (2004) found that the induction of mild increases in positive affect is associated with reduced perseveration of responses to past contingencies and greater cognitive flexibility, but at the cost of increased distractibility. Positive affect achieves this modulation by making us more attentive to novel stimuli, allowing new features of the environment more readily to gain access to our working memory. To understand their specific findings, a few details of the experimental paradigm are required (Driesbach & Goschke, 2004, pp. 344–345).

Participants were trained to respond to target stimuli appearing in a prespecified color while ignoring distracter stimuli in a different color. Then participants experienced one of two switching conditions. In one they had to respond to stimuli in a new color while distracters appeared in a previous target color: here increased flexibility should facilitate the disengagement from the formerly relevant task (presumably supported by a bias toward novel stimuli), thereby *decreasing* the switch costs. In the second condition participants had to respond to what had been the to-be-ignored color, while distracters appeared in a new color. Here, increased flexibility should again bias participants' attention toward novel stimuli and *increase* switch costs. The rationale is that switching attention incurs a cost because "stimuli that were targets before the switch, but served as distracters after the switch, still captured attention, thereby producing a response conflict on incompatible trials" (p. 346). Thus switch costs are increased "when a previously task-relevant stimulus feature activates a response that is incompatible with the response required by the current task" (p. 346).

Positive affect was introduced by having participants view a positive or neutral affect picture (for 250 ms) prior to the attention switch conditions. As predicted, positive affect almost completely eliminated the switch cost in the first condition, and reliably *increased* the switch cost on the response-incompatible trials in the second condition. The experimenters controlled for the possibility that it was not positive affect per se, but merely an arousal effect, by comparing negative affect with a neutral condition. They conclude that "taken together, the two experiments provide convincing evidence that the modulation of cognitive flexibility versus distractibility by the brief presentation of positive pictures reflects specific effects of emotional valence" (Driesbach & Goschke, 2004, p. 349).

Speculating on why positive affect modulates the stability-flexibility balance, Driesbach and Goschke suggest that positive affect signals the absence of danger or obstacles to current goals, permitting more exploratory and less focused modes of behavior and thought. This is consonant with Tomkins' (1962) account of the "resetting" role of the specific positive affects of curiosity, interest, and surprise,

which alert us to novelty and promote exploration, and creativity (see also Isen, 1987). These are the affects that underpin what is often regarded as "intrinsically motivated behaviour" (Tomkins, 1962). Since "adaptive action requires a dynamic, context-dependent balance between the maintenance and switching of goals and cognitive sets" (Driesbach & Goschke, 2004, p. 352), the selective contribution of positive affect to this process is intriguing and may prevent perseveration or ruminative reflection on the past in post-traumatic stress disorder, aiding the entry of new material into working memory. This would disrupt ruminative reflection, and promote attention to novelty and variants rather than similarities and analogs.

We have explored how emotion can shape our access to the environment. We now consider how self-reflective emotions and working models can also shape our access to our inner experience.

6. Differential Access to Memory: Cultural Inhibitions and Personal Partitions

6.1. Self-Reflective Emotions: on not Giving "Too Much Information"

Self-presentational concerns, mediated by norms of socially desirable experience and behavior, intrude into the privacy of our own psyche. We are thus permeated by cultural concerns. The more socialized, self-reflective, or self-conscious emotions of embarrassment, shame, pride, and guilt shape our recollective style, acting as internal rewards and punishments. These more cognitively and culturally mediated emotions are crucial for controlled social interactions, for social inhibition and skill. They are "necessary pains" modulating what we recollect and are prepared to report of our memory to others. Beer, Heerey, Keltner, Scabini and Knight (2003) note that people with orbitofrontal damage have difficulties in regulating behavior, particularly discerning behaviors appropriate with strangers compared to well known others. Patients' disclosures went beyond the intimacy required by a routine task asking for recollections of past experiences exemplifying self-conscious emotions: they "tended to include sexually intimate details when describing past emotional experiences" (p. 599). The authors include wonderfully wild examples. Orbitofrontal patients "did generate self-conscious emotions, but they tended to reinforce inappropriate behaviour rather than correct it" (p. 600). Relative to a control group, patients were significantly impaired in recognizing the expression of self-conscious emotions but not their recognition of expression of non-self-conscious emotions. Complex difficulties with self-conscious emotions are linked with impairment of contextually appropriate social inhibition in memory reports. For smooth (if less interesting) social functioning, self-reflective emotions are necessary pains, but they can get out of hand. In so far as they operate like an implicit audience they promote psychological partitioning, preventing full awareness of our own affective experience and memories.

6.2. *Psychological Partitioning, Repression and Suppression: How am I Feeling?*

Socialized, self-reflective emotions can promote psychological partitions that can reflect our experience in a particular social context, be it family or culture. Multilevel processing of awareness of events in the world and in ourselves means we can give an account of ourselves that fits with our socialized affects, but which is quite at odds with what is going on at another level. So we can have unconscious emotions, affects, and drives that move us directly to act without our being aware of them. When shamed or humiliated in our pleasure, we may attend away from our urges and emotions and may not fully experience or be able to report on these processes. These partitions between consciousness and action mean that we can readily be strangers to ourselves, unwilling or unable to access the very affective schemas and implicit motives that filter our access to awareness of processes within and without.

An extreme example of this is the Freudian conception of repression, simply summarized as the view that there are mental processes occurring at the moment, of which (at the moment) I am unaware. Repression is a motivated lack of awareness because awareness of a certain belief, wish, or impulse causes anxiety, guilt, and other forms of psychic pain. There are modern day experimental operationalizations of this notion. Lambie and Marcel (2002) explore a number of "meta-affective tendencies" that shape our phenomenology of emotional experience via what we attend to, in the environment and our *milieu interieur*. This is an echo of the "new look" in perception that started in 1947 when experimental psychologists first explored how people may avoid unpleasant or disturbing cues (Rusting, 1999), and individual differences in the extent to which people habitually focus on or away from disturbing or threatening stimuli captured by theories of repression/sensitization (Byrne, 1964; see Krohne, 1993, for a review). Lambie and Marcel operationalize "repressors" as people who are low on measures of trait anxiety, and high on defensiveness as assessed by the Marlowe-Crowne social desirability scale (Crowne & Marlowe, 1964): this is the kind of defensive self-presentation that is likely to be highly mediated by the inner rewards and punishments of the self-reflective emotions. They note that repressors attempt to avoid or draw attention away from or reinterpret threatening stimuli, whilst "sensitizers" continually monitor the environment for the presence of such stimuli. Lambie and Marcel (2002) cite Weinberger's (1990) description of repressors as individuals who "fail to recognize their own affective responses" (p. 249).

Repressors are more emotionally reactive in terms of physiological measures than people low in anxiety and low in defensiveness, and they are at least as emotionally reactive as high-anxious people. They *say* they have little to no anxiety, but show the physiological and behavioral emotional responses at least as strongly as those who say they have anxiety. There is a disjunction between phenomenology, or at least what is reported upon, and what is going on at another level.

Lambie and Marcel (2002) mount a convincing argument that this is not merely a transient inability to label emotion. They mention Jamner and Schwartz (1985),

who say that "it took 9 months of treatment before one such client began to have positive correlations between his subjective experiences and his physiological responses as assessed on a daily basis" (p. 250). They cite Weinberger, who says "under no circumstances (e.g. psychotherapy, anonymous questionnaire, lie detection, disclosure to intimates) have repressors as a group remotely indicated conscious beliefs that they experience relatively high levels of negative affect" (quoted in Lambie & Marcel, 2002, p. 353). They sum up that since repressors "show no more interference in high working-memory load tasks than do individuals with genuine low anxiety [this suggests] they have low levels or low frequency anxiety-related or task-irrelevant thoughts" (p. 250). Intriguingly, repressors are rated to be behaviorally anxious in stressful situations even when their self-reported anxiety is very low (Derakshan & Eysenck, 1997). It is possible that repressors' behavior tracks their physiology (in the form of micro-momentary expressions) without their being aware of their own physiological responses.

Lambie and Marcel (2002) think it implausible that, for those exhibiting these body states and behavior, there is "nothing that it is like" to be and behave in such a way: "even though they cannot report it, the expression of their anxiety phenomenology is what produces judges' ratings of anxiety" (p. 250). This is a case where the notion of privileged access breaks down in relation to emotion: sometimes others know our state before we do, and better than we do.[5] Lambie and Marcel canvass the options regarding the level at which this lack of awareness arises: that repressors may have "no awareness of the category of anxiety experience," "a lack of awareness of the experience itself," or that they could be "attending away from the experience" or "re-interpreting it," noting parallels with work on alexithymia and anger-management research (pp. 251–252).

Repression is costly on physiological responses, but light on cognitive load. This may be because repression is unintentional, whereas suppression is something that one can attempt to do, a kind of conscious attending away from mental currents or desires to act. Richards and Gross (2000) show that the suppression of emotional expression certainly has cognitive costs in terms of impaired memory. Attempting to suppress awareness of painful experiences has been shown in some cases to be very costly at a bodily level. Wegner, Shortt, Blake, and Page (1990) showed that those instructed to suppress an exciting thought about sex remained psychophysiologically aroused even though the thought is outside of awareness—as aroused in fact as those instructed to think about sex. They habituated less, so that when the thought returned to consciousness they showed physiological arousal again, unlike participants who have kept it in mind the entire time.

There is conflicting evidence regarding suppression in the attachment literature, however, as "dismissive-avoidant" individuals are capable of eliminating even the psychophysiological arousal attendant on painful thoughts, of suppressing the latent activation of their attachment system and not merely concealing latent distress (Fraley & Shaver, 1997). Dismissive-avoidant people have distinctive internal working models (IWMs). In the attachment literature, IWMs are the residues

of our experiences of others who have cared for us. They are instances of affective schemas: hot, affectively charged processes, whereby relationship cognitions:

> are inextricably tied to one another by their emotional content. In this view, emotions are not merely an outcome of working models but are fundamental to the way in which people organise their knowledge about their relationships. (Pietromonaco & Feldman Barrett, 2000, pp. 163–164)

Two parameters are most salient to IWMs: people differ in the degree to which they willingly rely on others for emotional regulation to regain felt security, and in their degree of emotional reactivity. Dismissive-avoidant people unwillingly rely on others for emotional regulation, and have low emotional reactivity. Fraley and Shaver (1997), using physiological measures of adults with such attachment styles, found that in some cases people pick up on the latent activation of such affective schemas and can suppress it before the affective experience even arises. However, as Pietromonaco and Feldman Barrett (2000) note, the two studies using physiological measures in this literature (of which Fraley & Shaver's, 1997, is one) find opposing patterns, as Dozier and Kobak (1992) found that the success of emotional suppression is less complete in people characterized by the same dismissive-avoidant attachment style. In their assessment, using the Adult Attachment Interview—a more implicit measure than the self-report measures used by Fraley and Shaver—they found an increased physiological responsiveness at points in the interview where subjects denied the negativity of their childhood experiences. It seems that dismissive-avoidant people can suppress emotional responsivity to thoughts about romantic partners readily enough but recollections of their childhood are rather more taxing at a physiological level. Further research is required to disambiguate the conflicting findings. "Whether working models actually guide processes such as attention, interpretation and memory remains an open question," note Pietromonaco and Feldman Barrett (2000), suggesting that the "strongest evidence so far comes from studies that have minimized self-report biases by using more implicit measures" (p. 170).

7. Affect and Coherence in Narratives of Separation

While Tomkins (1995) emphasizes the malleability of memory, his basic terminology includes "scenes" and "scripts" that lend a degree of organizing continuity. A scene is an organized whole that includes people, place, time actions and feelings. A script includes rules for predicting, interpreting, responding to and controlling experiences governed by a family of related scenes. What matters about scenes in determining their role in memory and personality is not merely frequency of occurrence or the intensity of affect, but whether the scenes become connected up by a variety of processes (like psychological magnification). Affects shape the accounts we give of relations with others, and the expectations we have of others, ourselves, and of the world. Pietromonaco and Barrett Feldman (2000) suggest that IWMs may best be characterized in terms of their underlying affective processes, saying that "affect may

function as the glue that binds information within mental representations" (p. 164). The power of that "affective glue" is evident in a recent study on the influences of IWMs across the generations.

Charles, Frank, Jacobson, and Grossman (2001) consider the effects of the affective basis of mothers' working models (of separating from their own mothers) when activated around a daughter's individuation and separation during adolescence. They pit the affective content of experience against the coherence of narrative structure—asking whether "negative self-other experiences" from the past are less destructive than incoherent narratives, if incoherence results from efforts to avoid knowing fully the past. Does the coherence of a personal narrative function as a fundamental tactic of self-protection and self control? They explore in an empirical study the forms of "repetition of the remembered past." Their research framework spanned three generations of women, used quantitative and qualitative data, and took care to use separate interviewers for mother-daughter pairs. A group of 72 white, middle-class, highly educated mothers (average age was 54.5) recounted their memories of whether separating from their own mothers (in the sense of gaining psychological autonomy and being treated as an adult by mother) was encouraged or constrained. Then the daughters (average age was 26.4) of these women spoke about their experiences of separating in adolescence. The assumption is that IWMs of the mothers' experiences of separating from their own mothers should be activated by and implicated in their reactions to their daughters' separation. The relationship is explored between the content and structural coherence of the mothers' narratives and the daughters' experiences of autonomy in the mother-daughter relationship.

Charles et al. (2001) emphasize two things: the *affective valence* of past experiences of separation from one's mother, and the *coherence* of the narrative, i.e., the integration of the memories of those experiences. Three groups are defined according to mother's memory content (bad or good) and structure (coherent or incoherent): (a) constraining incoherent (bad content, incoherently remembered); (b) constraining (bad content, coherently remembered); and (c) enabling (good content). "Content" addresses whether mothers recalled their mothers as either "constraining" (those who actively devalued or withheld support from their daughters, or behaved in a manner that conveyed negative judgment) or "enabling" ("those who communicated acceptance or actively acknowledged, supported or showed interest in the daughter's ideas or perspective," and who facilitated "independence and separateness in a warm, encouraging, trusting fashion"; Charles et al., 2001, pp. 711–712). "Structure" referred to whether narratives were "coherent" or "incoherent." A person is said to remember incoherently if a diversity of experiences (good and bad) are not integrated, but are remembered with contradictory elements[6] (e.g., if one makes positive generalizations, but offers only specific negatives instances with no recognition of the disjunction). Incoherent narratives are seen as the product of "defensive exclusion" but the excluded material "still directs and drives behaviour," making it more likely for us behaviorally and emotionally to repeat the past in some way, making us less open to present contingencies to what is possible now.

Charles et al. (2001) show that schemas can operate at an unconscious level, filtering experiential possibilities, shaping responses in the present in systematic and suboptimal ways. Here is an ecologically valid study of memory and personality in real life transitions. Affective schemas related to differing patterns of interconnectedness between mothers and daughters.

Charles et al. (2001) suggest that negative self-other experiences from the past are less destructive than the sequelae of the efforts to avoid knowing. Their data do not support this thesis. The data actually show that it is not only incoherent narratives (said to arise from the defensive exclusions that are seen as efforts to avoid fully knowing the past) that are destructive. The relative coherence of the narrative at best predicts *which* destructive outcome arises: *incoherent* bad memories are associated with having enmeshed daughters, while *coherent* bad memories are associated with having defensively over-self-reliant daughters. So what these data actually show is that the *affective valence* of past experience is all-powerful in promoting some form of repetition of the past. Coherence might shape the form of the repetition. For mothers with incoherent, negative narratives of the past, overt mother-daughter conflict was avoided, but so was the daughter's personal autonomy and psychological differentiation: the daughters submitted, idealized the mother and celebrated emotional enmeshment—e.g., ''My mother feels my hurt and I feel her hurt'' (p. 722).

Charles et al. (2001) conclude that ''mothers with incoherent memories appeared to be blind to the past, whereas those with coherent memories (of unresolved separation conflicts) appeared to be blind to their repetition of the past in the present,'' ''blind to the negative ramifications of their die hard efforts to ensure their daughters' independence'' (p. 725). Given that the incoherent accounts were associated with highly dependent and enmeshed daughters, and the coherent accounts were associated with super-competent daughters with ''heated, prolonged rebellions,'' and ''uneasy truces'' (p. 723), it's a tough call to say which is ''less destructive.''

Mothers with *coherent* negative narratives have avoided defensive exclusion (as defined here), which was postulated as being more damaging than negative self-other experiences (i.e., the affective content of past experiences). These women still remember the negative as negative. Charles et al. (2001) shift theoretical ground a little suggesting that the past is ''all too'' available for them (p. 725). They note that ''greater access to separation information did not prevent difficulties between mothers and daughters in one generation from being repeated in the next'' (p. 723).

Coherence and integration of memory narratives are not enough to prevent the negative affective clout (the basis of the hot affective schema) from having its effect. The negative valence of affects associated with the conflictual past is not housed within the mother, nor tamed by coherent narrative structure. These mothers (with coherent negative memories) ''knew what *not* to do, but had little sense of how to encourage independence without withdrawing support,'' and were perceived in this way by their daughters, as being ''critical, domineering, unsupportive, and as unable to accept the daughter's separation, without inducing feelings of shame and guilt''

(Charles et al., 2001, p. 722). The researchers suggest these mothers had inadvertently re-enacted their own mother's constraining attitudes. These are powerful, unexpected findings. Charles et al. expected but did not find "a relatively strong, positive relationship between mothers' coherence and their capacity to provide their daughters with a better separation experience than they had themselves" (p. 723). Coherence of narrative does not prevent the repetition of past, negative self-other experiences. The efforts to avoid knowing are not unequivocally more destructive than the negative experiences.

This research reveals the affective basis of a schema or IWM as a powerful filter, deriving from the past, and blinding a woman to present possibilities. The coherence of the narrative told does not attenuate the effect of that schema. Secondly, the research reveals the intersubjective consequences that may result from an affective memory schema being activated at a relevant life threshold.[7] The mother's "personal" memories extend out and into the experience of the daughter, whether or not they have been consciously and coherently turned into a narrative, or have remained fragmented and contradictory.

In addition to this research on the transgenerational activating tendencies of hot, affective schemas, we now turn to a final strand of research that considers the role of activating tendencies of implicit motives on the content and structure of autobiographical memory. In the research we have just examined, the narrative structure is distinct from the operation of affective schemas and IWMs: but in the last case study the motivational tendency itself also contributes to the nature of the structure of autobiographical memory.

8. Implicit Motives and the Content and Structure of Autobiographical Memories

A motive is defined as a recurrent preference that orients, selects, and directs attention to relevant motivational properties of events, driving motive-relevant behavior. Woike and Polo (2001) had individuals record their most memorable experiences each day for six weeks, and memories were coded for content and structure. They wanted to see whether memories were congruent in content and manner of expression with a person's level of "agency" or "communion." "Agency" refers to the need for autonomy, instrumentality, and dominance in relation to others, while "communion" refers to the needs for relationships, interdependence' and connection with others. In this research, since memories have to be coded to assess the presence of the differing implicit motives, agency is operationalized as statements reflecting a need for power (Npower) and a need for achievement (Nach). Npower is defined as a recurrent preference for having impact, control and influence over another person, group or the world at large; Nach is defined as a recurrent concern with meeting a personal standard of excellence. Woike and Polo operationalize communion as a need for intimacy (Nintimacy), defined as a preference for warm, close, communicative exchanges with others, in tune with the

definition and coding set out by McAdams (1984). Results of the coding of participant's memories showed that "the content of events that are motive related is most likely to be remembered," and that "agentic and communal individuals structured their motive congruent memories, using differentiation and integration respectively" (Woike & Polo, 2001, p. 411). Differentiation involves "perceiving differences, separateness, independence and opposition," while integration involves perceiving "similarity, connection, interdependence and congruity" (p. 411). These findings echo those of Woike, Gershkovich, Piorkowski, and Polo (1999), who found individuals process information differently in ways related to their motives. They found that motives influenced not only the *content* of autobiographical memories in a motive-congruent direction, but that the *structuring principles* reflected the dominant motives (see also Woike, Lavezzary, & Barksy, 2001). In analyzing the expression of the recollections, it was found that people classified as "agentics"[8] used more differentiation—i.e., comparisons, contrasts, and restriction of meaning (e.g., frequent use of phrases such as 'from her point of view', and 'based on my understanding'). Subjects classified as "communals" used more integration—i.e., causal links, similarity, and resolution (e.g., frequent use of such phrases as 'all in all' and 'generally speaking'). Thus individual differences in implicit motives shape both the content of recollected material and the structuring of that recollected material. This underscores the systematic role of personality differences in influencing what is counted as a salient memory, and in influencing the structuring and integration of autobiographical memory.

9. Conclusion

The selectivity of influence on attention arising from affect infusion and personality extends to autobiographical memory. Affective structures like IWMs and implicit motives influence memory content and integration. Self-reflective emotions shape our cultural inhibitions and personal partitions by systematically influencing both our access to our own emotional experiences, and our preparedness to report on them. Studies of autobiographical memory optimally might include in research design elements permitting indirect assessment of affective influences. Indirect assessment is important because while people vary in capacity to report on their own affects, these affects have multiple and simultaneous influences on attention, cognitive load, and physiological reactivity, as well as on the content and integration of narratives. Because, in personal memories, substantive constructive processing permits affective immersion to influence outcomes, affect may mediate findings at the level of content and structure. While there is an adaptive cognitive economy of schema activation, insofar as we can be unaware of the role of schemas in filtering the present, we may be blind to new possibilities now: we sometimes need the resetting affects of curiosity and surprise to alert us to novelty. We do, as Dennett (1992) suggested, spin narratives to ourselves (and others) as a means of self-protection, but even narratives neatly recalled betray their affective clout, and can impel us to

act in suboptimal ways. The tidiness and coherence of autobiographical accounts of the past do not safeguard our openness to present possibilities from the affective legacy of experience.

Notes

[1] In creating a robot ''Yuppy'' with colleagues Brooks, Kemp, and Yoshida, Velasquez (1999) identified six different types of affect programs: anger, fear, distress/sorrow, joy/happiness, disgust and surprise, drawing on the work of Ekman and Panksepp. Following Izard, he considered noncognitive releasers of emotion (i.e., neural, sensorimotor, motivational) as well as cognitive. This allows for the coassembly of basic affects to produce other emotions, while cognition creates the higher order or secondary emotions.

[2] Forgas explicitly notes that he is using 'affect' and 'emotion' interchangeably.

[3] Positive affects include interest-excitement, surprise-startle, and enjoyment-joy (Tomkins, 1962).

[4] Negative affects include fear-terror, distress-anguish, and anger-rage (as well as the affect auxiliary shame-humiliation, and the drive auxiliary contempt-disgust); see also the wonderful formulation in Izard (1991).

[5] As any dog owner knows, this privilege is not restricted to other humans.

[6] A wonderful example of such an account: ''She usually didn't balk at my attempts to become independent . . . It was expected, it was part of her plan. So, I began to be more independent. I was an obedient person and did what she expected'' (Charles et al., 2001, p. 713).

[7] The mother's accounts were not actually contemporary to the daughter's separation at adolescence but were in fact reconstructive accounts of that process, as the authors acknowledge. The coherence of these accounts may have come after the separation phase of adolescence.

[8] Subjects were so classified if they were above a certain cutoff on one motive and below a certain cutoff on the other motive. For example, in Woike and Polo (2001), and all other studies cited in this article by Woike and colleagues, it was individuals in the top third of one motive and the lower half of the other motive (p. 398). So they are selecting as ''agentics'' people who are high on agency and low on communion. This dichotomizes the variables, a procedure that some have criticized at a statistical level, but it is quite commonly used in some personality and cognitive scientific research.

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