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LETTER TO THE EDITOR

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Proust Remembered: Has Proust's Account of Odor-cued Autobiographical Memory Recall Really been Investigated?

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In the opening section of their paper entitled 'Odour-evoked autobiographical memories: psychological investigation of Proustian phenomena' (Chu and Downes, 2000a) the authors refer to 'a literary anecdote from Proust' as an example of 'folk wisdom concerning the power of odours to vividly remind one of particular past experiences'. Providing a one-paragraph excerpt from Proust's three-page account of this 'anecdote', they define 'what has become known as the Proust phenomenon' as 'the ability of odours spontaneously to cue autobiographical memories which are highly vivid, affectively toned and very old'. They then present a critical review of published research on odor memory in which they correctly point out that all studies but one (Aggleton and Waskett, 1999) were only partially relevant to the Proust phenomenon, either because they did not involve truly autobiographical memories, or because they did not provide a comparison between memories elicited by olfactory stimuli with memories triggered by other stimuli such as verbal or visual ones, or else because they were not run under ecological conditions (e.g. by requiring active association between odor and other stimuli during the encoding process).

Chu and Downes (2000a) then proceed to summarize the findings of two new studies which were later to be published in full (Chu and Downes, 2000b, 2002), characterizing their approach in these studies as 'translating the essence of Proust's anecdotal literary descriptions into testable scientific hypotheses using the language of contemporary cognitive psychology'. In my opinion, the method used in these studies precludes them from being relevant to 'spontaneously cued' memories and from revealing memories that are 'affectively toned' or 'very old' in the sense of Proust's (1956) account. Moreover, Chu and Downes' definition fails to include essential parts of the complex chain of psychological processes which Proust describes. Let me address this final point first.

To gain a clear understanding of Proust's clinically detailed description of the psychological event that was to

become the key to his multi-volume novel *À la Recherche du Temps perdu* (Proust, 1913), I turned to a modern French edition (Proust, 1956). The very title of the authorized English translation (Proust, 1928), *Remembrance of Things Past*, tends to lead the reader astray. 'Temps perdu' refers not to 'things', but to time itself, that Bergsonian subjective human time in which the individual's life is embedded. And 'perdu' is not 'past', but 'lost', with overtones of an irretrievable loss as in Milton's *Paradise Lost*. The passively nostalgic word 'remembrance' fails to convey the shock of Proust's revelation occasioned by the crucial, sudden vision of a past recaptured, nor does it convey the urgency of the quest for an understanding of this vision, expressed by 'à la recherche', an expression which denotes both a mission and an exhortation to pursue this mission (as in 'aux armes, citoyens!'). For the sake of general comprehensibility, I will nevertheless quote from the English translation, replacing or supplementing parts of it by my own rendition; these parts are printed in italics.

Many years had elapsed during which nothing of Combray, save what was comprised in the theatre and the drama of my going to bed there, had an existence for me when on a day in winter, as I came home, my mother, seeing that I was cold offered me some tea, a thing I did not ordinarily take. I declined at first, and then, for no particular reason, changed my mind. She sent out for one of those little cakes called 'petites madeleines'. . . . And soon, mechanically, weary after a dull day with the prospect of a depressing morrow, I raised to my lips a spoonful of the tea in which I had soaked a morsel of the cake. No sooner had the warm liquid, and the crumbs with it, touched my palate than a shudder ran through my whole body, and I stopped, intent upon the extraordinary changes that were taking place *within me*. An exquisite pleasure had *pervaded me, unconnected with anything*, with no *suggestion* of its origin. *It had* at once *made* the vicissitudes of life indifferent to me, its disasters innocuous, its



brevity illusory, *as does love, and had filled me* with a precious essence: or rather, this essence was not in me, it was myself. I had ceased to feel mediocre, accidental, mortal. Whence could it have come to me, this powerful joy? I *sensed* that it was connected with the taste of *the* tea and cake, but that it infinitely transcended that savour, could not *be of the same kind*. Whence did it come? What did it signify? How could I grasp it? *I take a second sip in which I find nothing new, a third that brings me a little less than the second one. It is time to stop, the drink's value appears to fade. Clearly, the truth that I look for is not there but in myself.* . . . I put down the cup and let my attention turn inward. It is up to my mind to find the truth. But how?

Here follows a one-page description of the tortuous, unsuccessful effort to bring to light *'that of which I feel the heartbeat inside me, the image, the visual memory which, linked to the savour, tries to follow it towards me'*. Just when Proust is ready to give up, *'the memory suddenly appears before my mind*. The taste was that of the little *piece of madeleine* which on Sunday mornings at Combray (because on those mornings I did not go out before church-time) my aunt Léonie used to give to me, dipping it first in her own cup of real or lime-flower tea.'

This is followed by the observation that *'the sight of the little madeleine had recalled nothing to my mind before I had tasted it'* and by speculations about reasons for the unique powers of the flavor, leading to the conclusion that *'when from a long-distant past nothing subsists . . . the smell and taste of things remain poised for a long time . . . and bear unfaltering, in the tiny and almost impalpable drop of their essence, the vast structure of recollection'*. A long account of the manifold details of this structure culminates in the remark that *'all of Combray with its environment . . . has come forth from my cup of tea'*.

This description comprises a sequence of psychological processes that starts with a surge of emotion (a sense of joy and a sense of imperviousness to vicissitudes, disasters, even death) that is felt to occur at the very instant of a non-attentive taste-odor-texture-temperature sensation (taking a sip of warm tea mixed with crumbs of cake). The apparently 'isolated', causeless rush of emotion causes surprise which in turn triggers a conscious search for a possible cause. A link with the simultaneous sensory event soon comes to mind but does not, in itself, explain the emotion. The explanation is grasped only after a frantic but fruitless conscious search is abandoned, making place for a subconscious search which leads to the subjectively sudden discovery of the link with a specific, hitherto forgotten event in childhood in which a similar taste-odor-texture-temperature had been experienced. The reinstatement of this event, with great vividness and richness of detail, then becomes the starting point for a conscious uncovering of an ever-widening circle of addi-

tional details about the people and incidents related to the childhood experience.

An attempt to translate this account into testable hypotheses generates the following set of hypotheses. For the sake of conciseness, I formulate these in terms of olfactory stimuli rather than, reflecting the true nature of the stimulus in Proust's account, olfactory-gustatory-textural-temperature ones. This simplification may involve a distortion (some or all of the hypotheses may be true only for complex, multi-sensorial stimuli) and must therefore be kept in mind.

1. Awareness of the emotions associated with an olfactory experience is prior to awareness of the presence of the sensory stimulus which elicits the experience
2. The impetus for a search of the cause of the emotions associated with an olfactory experience is surprise, engendered by the apparently causeless surge of emotion experienced.
3. Awareness of physiological activation by an olfactory memory is prior to awareness of that memory as the source of activation.
4. Awareness of the meaning of an olfactory memory is prior to awareness of its specific content.
5. Establishing a linkage between an olfactory experience and an autobiographical memory elicited by this experience is not an automatic process.
6. A high level of attention is not necessarily conducive to the search for this link.
7. Accessibility to declarative memory of the recalled autobiographical event through other (e.g. verbal or visual) cues is not a necessary condition for its being elicited by an olfactory stimulus.
8. The time lapse between an olfactory experience and the autobiographical memory cued by it may be of the order of decades.
9. Autobiographical memories elicited by olfactory events are exceptionally rich in contextual information.

Of these hypotheses, only hypotheses 7, 8 and 9 are addressed by Chu and Downes' research. Hypotheses 1 and 2 which play a key part in Proust's account and according to which the shock of an unexpected and inexplicable surge of emotion triggers the search for the recalled event, cannot be addressed by any research in which, as in Chu and Downes' (2002) design, odors are explicitly presented to the test subjects. In other words, this explicit presentation of olfactory stimuli, accompanied by instruction to think of memories evoked by them, prevents the authors from testing the 'ability of odours spontaneously to cue autobiographical memories' to which they refer in their definition of Proustian effects.

With respect to Chu and Downes' (2000b) claim to have proven the 'very old'ness of memories elicited by odors in the Proustian phenomenon, we should recall the opening sentence of Proust's account: 'Many years had elapsed



during which nothing of Combray . . . had an existence for me.' What mattered to Proust, perhaps more than the oldness of the memories, was the fact that they had been totally buried and forgotten in the interval. By eliciting the memories of their subjects using odors selected on the basis of their 'ease of procurement, familiarity and common, everyday occurrence' Chu and Downes (2000b) made it unlikely that these would be memories of long-forgotten episodes. Their finding that the peak in memories named by the odor-cued group involved incidents experienced at age 6–10 while the peak for a verbally cued control group came between the ages of 11 and 25 seems irrelevant to Proust's elation about recapturing a lost period of his life (a *temps perdu*) on the wings of 'the smell and taste of things . . . poised . . . in the tiny and almost impalpable drop of their essence'. The argument that long-forgotten memories are most likely to be elicited by olfactory cues specifically evocative of childhood events has recently been emphasized also by others (Herz and Schooler, 2002).

As for Chu and Downes' (2002) proof of the 'affective toning' of odor-induced autobiographical memories: the finding of a positive change in ratings on the scales 'pleasant', 'personal', 'painful', 'anxious' and 'embarrassing' between an initial response, based on odor labels only and a subsequent response, based on the labels plus exposure to the corresponding odors, can hardly be considered an adequate 'translation' of the ecstatic experience described by Proust of having transcended time and mortality by means of an odor-induced memory. It is curious that Chu and Downes, although giving their respondents 3 min to think and relate verbally an autobiographical memory cued by the verbal label or by the odor of their stimuli, did not consider these accounts of the participants sufficiently interesting to make a record of them.

Generating hypotheses from a fictional autobiographical account does not, of course, provide these hypotheses with any *a priori* claim to validity. *A posteriori* indications of validity (notably of hypotheses 1, 7, 8 and 9) have, however, been provided by other, purportedly veridical autobiographical accounts (Laird, 1935; Herriot, 1977; Gilbert and Wysocki, 1987; Janisch, 1992; Antin, 1997; Herz, 2000) and by experimental research (notably of hypotheses 1, 2, 3 and 5). A review of these accounts and this research is planned for future publication.

An analysis of the above-mentioned autobiographical accounts suggests, moreover, that two features of Proust's description which he himself did not emphasize may have general validity. This finding gives rise to two additional hypotheses for investigation.

10. The storing of a specific olfactory event in long-term memory is favored by repeated occurrence of this event under the same contextual conditions, at intervals ranging from ~1 week to ~1 year.

11. The storing of a specific olfactory event in long-term memory after a single occurrence is promoted by an association of the event with strong emotions.

As to hypothesis 11, note that its phrasing avoids a claim that long-remembered olfactory events are always and of necessity affectively toned. Proust attributes the strength of his emotion not to the remembered incident, the boy's regular and notably unexciting Sunday visits to his aunt, but to the suddenness and inexplicability of the *retrieval* event with its intimation of deeper meanings. The 'olfactory experience' referred to in hypotheses 1, 2 and 5 is the incident of *retrieval*.

The substance of this letter has consisted of a comparison of the isolated sentences from the authorized English translation of Proust's *Au coté de chez Swann* that are usually cited in the odor psychological literature, with the complete account of the odor–taste–texture–temperature-invoked memory retrieval event in Proust's novel. This may lead to an impression that the core concern prompting the writing of the letter is related to philological faithfulness to Proust's text and that its key message is that Proust's name should not be cited in vain. This is not the case. Proust's text is, after all, not a scientific record but part of a work of fiction. However, it is a text full of suggestive observations that have found support both in others' autobiographical accounts and in experimental research. It would be a grievous loss to odor psychological research if its experimental investigation were to remain confined to testing the simple set of hypotheses that, in Chu and Downes' words, 'has become known as the Proust phenomenon'.

It is perhaps unfair that this letter has been cast in the form of a critique of Chu and Downes. Their experiments (Chu and Downes, 2000b, 2002) are carefully conducted and their definition of 'what has become known as the Proust phenomenon' is realistic. My critique is directed at their claim that what they have translated into testable hypotheses represents 'the essence of Proust's anecdotal literary descriptions' (Chu and Downes, 2000a). Proust's account can and should be a far richer source of hypotheses for investigation.

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