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Response to the letter to the editor by Van Damme and Colleagues

We are grateful to Van Damme et al. [11] for their thoughtful comments on our recent article dealing with hypervigilance [6]. In that article, we document by means of direct scaling that chronic pain (TMD and FM) patients who are hypervigilant, as measured by a questionnaire, show perceptual amplification of sensations aroused by cutaneous pressure, at both noxious and (less expectedly) innocuous levels of intensity; simple auditory stimuli were also perceptually amplified, although to a lesser degree. Our results are consistent with the long-held view of Rollman and colleagues [7,10] that hypervigilance involves perceptual amplification that encompasses more than the percep-

tion of pain, affecting aversive sensations in any modality (“generalized hypervigilance”).

As our article explained, the concept of hypervigilance has evolved since it was first introduced into the pain literature by Chapman [2], who thought of it as heightened attention to sensations that were painful or were thought by the patient to have negative health significance. Perceptual amplification was not part of his description. The primary concern of Van Damme et al. is that we should strictly adhere to Chapman’s original usage of the term hypervigilance, and that to do otherwise is “throwing away the ‘baby with the bathwater’”. We respectfully disagree. Most scientific concepts evolve over time: Just in our own field, consider the widely accepted changes that have occurred in the meanings of the terms pain, hyperalgesia, and nociceptor. In classical terminology we could say that hypervigilance causes or is associated with perceptual amplification, but if this link is consistently present, as research appears to indicate, it may actually be more straightforward to say that both heightened attention and perceptual amplification are *components* of hypervigilance.

Van Damme et al. [11] also maintain that the PILL is not a valid measure of hypervigilance, because it is a symptom checklist – or, more precisely, a list of symptoms whose frequency of occurrence the respondent is asked to report. Most of these symptoms are relatively minor ones (runny nose, indigestion, sunburn, etc.) that everyone has from time to time, but does not pay much attention to. The use of this questionnaire by pain researchers as a measure of hypervigilance [1,5,7] or somatic focus [8] rests historically on the extensive research that went into the development of this instrument by social psychologist James Pennebaker [9] and colleagues. They found, for example, that experimental subjects whose attention is directed inward by the sound of their own breathing while walking on a treadmill, will later report more symptoms than subjects who listened to street noises. Alertness to possible symptoms, in other words, is a major contributor to reporting them. Very hypervigilant people will report that they have a majority of the symptoms on the PILL at least monthly; these symptoms are, by design, so diverse as to make an organic explanation unlikely. Pennebaker does not use the term hypervigilance, but his work is consistent with this concept.

It is, of course, desirable to measure hypervigilance in different ways. The technique of measuring the ability of painful stimuli – or stimuli that the subject fears may be painful – to interfere with performance on an unrelated task (e.g. auditory discrimination) is certainly a valuable research tool [3,4]. This method appears to be especially effective in demonstrating attentional effects when the threat value of pain is high. Our research is to some extent complementary to this work, in that we showed hypervigilance (manifested as perceptual amplification) to be robust even when subjects are experiencing 15-s presentations of very gentle pressure, which they are unlikely to perceive as threatening. Hypervigilance does indeed appear to be a multifaceted phenomenon that requires additional study and conceptual development [10].

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