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Examining the complexities of affective experience will enhance our understanding of pain and inform new interventions designed to bolster resilience

Alex J. Zautra, PhD[1] and **John A Sturgeon, PhD**[2]

[1]Department of Psychology, Arizona State University, Tempe, AZ, USA

[2]Department of Anesthesiology, Perioperative, and Pain Medicine, Stanford University Medical Center, Stanford, CA, USA

The examination of "instabilities" in affective experiences [14] opens up a new window into the emotional experiences of those in chronic pain. Such variability in affective states has been studied before, but not with the same level of rigor, and rarely with patients with moderate to large daily fluctuations in their pain experience. Usually we think of affects in terms of magnitude, and we typically focus on negative emotional states. We also are often examining these states by means of retrospective accounts of weeks or months, introducing biases that are unlikely to be random ones [2, 10]. People who remember experiencing abuse during their childhoods, and those who have a propensity to report depression and anxiety are different from those who are less inclined to recall and report those negative experiences [3, 15, 16, 21]. By using daily accounts, such biases are reduced. Furthermore, the inclusion of daily accounts of positive emotional states provides a richer accounting of the person's immediate affective experiences.

That instability, independent of the magnitude of negative feelings, would moderate the effects of pain on disability and cognitions about pain provides us with an opportunity to examine premises about the role of emotional states in successful adaptation to pain. The authors [14] invite us to look further into the quality of those experiences, and in particular, the uncertainty they may engender, as factors influencing adaptation. It is perhaps not surprising that positive emotion instability was less influential, but, given the recent work by Ong and colleagues [11, 13] on positive affect variability, we think more work is needed, closer in time to the actual pain experience, perhaps within minutes or hours rather than across days, to address that question. Indeed, a different within-subjects examination might be able to detect not just between-person differences in affective stabilities, but also how shifts in affective predictability from one occasion to the next might identify particularly vulnerable times in the lives of patients with pain. In that case, we would be identifying times when people are less resilient to pain, rather than identifying people who are less resilient because of the instabilities in their affect regulation capacities. Further, there may be other salient roles for day-to-day changes in positive affect that are not captured in the

Corresponding Author: Alex J. Zautra, Ph.D., Foundation Professor, Department of Psychology, Arizona State University, 950 S. McAllister, P.O. Box 871104, Tempe, AZ 85287-1104, atajz@asu.edu.

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current analysis [5]. For example, individuals facing more pronounced psychiatric distress may demonstrate ongoing deficiencies in positive affect, as in cases of moderate or severe depression. Consequently, stability of positive affect may manifest differently according to the presence or severity of current depressive symptoms, particularly in cases of severe depression. Additionally, positive affect has previously been identified as a salient predictor of physiological and psychological recovery in response to stress, pain, or negative patterns of cognitive appraisal, such as catastrophizing [1, 7, 8, 12, 19]. These prior findings may suggest that positive affect stability or instability may be a useful longitudinal mediator of psychological interventions that may further characterize trajectories of recovery for individuals living with chronic pain. This type of effect may be noted in studies of related mediators, such as acceptance of pain. Those individuals who adopt an accepting stance towards their pain may not only demonstrate greater sustainability of positive affect when in pain, but also less vulnerability to pain-related increases in negative affective states [9].

There is one missing element in this fine study [14]. All measures gathered are designed to identify cognitions, moods, and perceptions of pain; all of which reference internal states. Daily affects are gathered along with pain and disability indicators, and depression and anxiety are gathered to identify and control for individual differences in depression and anxiety. There is no measure taken of external events independent of subjective states that can influence the experience and regulation of pain, positive and negative emotions, cognitions, and disablement [6]. It is not surprising then that the authors' implications of their findings are constrained to ways of understanding and intervening to influence cognitive and affective states that reside within the person.

Yet we know better than to think that our perceptions of our inner states of pain and other affective states exist in a realm of reality independent of the external world. The social world, in particular, has powerful influences on our emotional states. My colleagues and I have found good evidence that external stressors, usually social in origin, not only magnify negative affective experiences, but narrow the contours of affective experiences, collapsing the psychological distance between positive and negative states of mind [3, 4, 18, 20]. Recently, we and others have been examining how sharing positive emotional experiences with others magnifies their impact, and enhances resilient mindsets (Arewasikporn, Zautra, & Sturgeon, manuscript under review). Greater attention to the social relationships of patients with pain may indeed further humanize the doctor-patient relationship by acknowledging that the social world matters to the patient in their struggle to adapt to their condition [21]. Though unique in their neural signatures to some extent, painful social interactions and pain sensations attributable to somatic disturbance may combine in the human mind to accentuate suffering and further disablement [17]. Interventions that strengthen positive interpersonal relations of patients with friends and family, reduce stressful social encounters that exacerbate their condition, and improve doctor-patient interactions are needed. Such programs would complement existing cognitive-behavioral programs to build a bridge across the bio-psycho-social divide that hyphenates our understanding of the human needs of the person in pain.

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