To the editor,

We appreciate Nettle's honest efforts (JAD 81, 2004) to review our Social Navigation Hypothesis (SNH) of unipolar depression (Watson & Andrews, JAD 72, 2002) and concordant evolutionary adaptationist models (Hagen 1999, 2002, 2003). Unfortunately, Nettle has misconstrued the SNH and produced a misleading critique. Here I hope to clarify one major point that we probably have not explained well enough in our writings to date.

The SNH elucidates *specific kinds of social conflicts* that the core symptoms of minor and major depression (MDD) logically could have been designed by natural selection to help resolve. In the particular misconstrual I will focus on here, Nettle portrays the SNH as predicting negative life events (NLE's) should be a reliable predictor of depression. In contrast, the SNH predicts that even apparently momentous NLE's will fail to cause MDD in most individuals, because such events are so often unconnected to *the special sorts of social conflicts* that MDD can, usually as a strategy of last resort, effectively and efficiently remedy.

The SNH was formulated on the basis of the fact that each human life unfolds, necessarily, within a complexly interacting matrix of socioeconomic contracts. As each person's contractual matrix crystallizes around him it may yield more reliable fitness benefits, but it is also likely to result in accumulating socioeconomic and political constraints. Such constraints arise naturally and reliably, because each member of a social group with whom a person has a contract seeks to build and maintain a stable, well specified array of social exchange relationships within which to make various small tactical movements, within their *status quo* socioeconomic niche, that improve their own inclusive fitness.

For most people engaged in incremental socioeconomic moves, normal social negotiations involving manageably small subsets of social partners are effective and not much is at stake when they fail. Thus their contractual matrix is not overly restrictive. Any prolonged social conflicts are mild or involve few partners. Here the matrix as a whole does not pose a net fitness hindrance; the SNH does not predict MDD under these circumstances regardless of NLE's such as lose of loved ones or a drop in social rank.

However, any person's contractual matrix can be transformed into a prison, crippling to fitness, when something happens that calls for a major overhaul of one's socioeconomic strategy and therefore serious, simultaneous, coordinated revision of many social contracts. Problems of social analysis and persuasion inherent to *complex, stubborn, high stakes, multi-partner social conflicts* that arise *in this specific context* are the primary ones we propose the core symptoms of MDD evolved to help resolve. Note that some cases of MDD that seem to be associated with conflicts with one or two social partners may be designed to garner wide support for dealing strongly with those individuals (see also Cline-Brown & Watson, 2004).

To my mind, the SNH places little emphasis on NLE's as conventionally construed. Under the SNH, *any* event or shifting circumstance that creates *a severe socially imposed mismatch between an individual's capacities and opportunities for fitness-enhancing socioeconomic pursuits* represents a risk factor for major depression. This could even include a positive life event. Given a creative inspiration, a new technological capacity, a new resource pool or set of social privileges that are necessary but not sufficient for successful pursuit of an important new fitness-enhancing activity, a person may suddenly need novel, uncontracted forms of social support to leverage their new capacities.

The SNH explains how depression may help individuals obtain extraordinary forms of support within intrinsically conservative social networks via (1) configuring the mind for enhanced social information processing and strategic bargaining, (2) the production of persuasive honest signals of need, and (3) broadcasting persuasive extortionary costs to positive fitness correlates in the network (as when, e.g., a veteran hunter is unable to provide meat, tactical leadership, and training to social partners when depressed). Nobody claims to have proven the SNH, but we believe we have provided ample justification for explicit empirical testing of its propositions.

Nettle's other objections to the SNH seem weak to this writer (e.g., his figures on the heritability of MDD are probably inflated due to the heritability, for example, of personality traits that tend to lead to the kinds of social conflicts specified by the SNH). Others actually may support the SNH (e.g., negative reactions toward depressives are *predicted*, since MDD is a form of manipulation).

Nettle's own formulation raises the question of why, if MDD represents a maladaptive extreme of a normal distribution of mood, we do not have the other side of the curve represented in the form of pathological states of elation or happiness with similar patterns of heritability. Mania does not, nor is there even a recognized condition of unipolar mania to match unipolar depression.

Moreover, Nettle's hypothesis represents standard non-adaptationist null hypothesis thinking which cannot be evaluated without conscientiously eliminating adaptationist hypotheses (Andrews et. al., 2002), like the SNH. Nettle adds to a massive collection of untested illness models without explaining why his view should be favored over the many others. For me, Nettle's hypothesis offers no new conceptual insights, nothing to test, and no implications for improved treatment of depression. One thing that does recommend it is a high degree of parsimony.

Despite a seemingly unfettered proliferation of illness models over the past several decades, MDD is increasingly pandemic. The SNH was formulated to stimulate qualitatively expanded research in the mood disorders field. The SNH sounds a plausible warning that simply shutting off certain forms of psychological pain with ever more efficacious pharmaceuticals, under the *assumption* that one of the many illness models must be correct, could be, to put it mildly, inappropriate. More sophisticated psychiatric practice based on a deeper evolutionary understanding of the human psyche is necessitated by the growing availability of powerful medications.

Sincerely yours,

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