

To the editor,

Nettle (JAD 81, 2004) misinterprets the adaptationist social navigation hypothesis (SNH) for Major Depressive Disorder (MDD) proposed by Watson and Andrews (JAD 72, 2002) and Hagen (1999, 2002). Much evidence Nettle marshals against the SNH is therefore not evidence against it, and some actually supports it.

Others have hypothesized that depression is an evolved signal of social need (e.g., Henderson 1974). As it stands this is implausible because, as Nettle correctly points out, depression elicits negative reactions in social partners of the depressed (Segrin and Dillard 1992), precisely the opposite reaction that should be elicited by a signal of need. Additionally, emotions and behaviors like sadness, grief, and crying, adequately serve as such signals; as a simple signal of need, MDD is superfluous.

We have therefore argued that MDD functions to credibly signal need and, crucially, *compel* support when (1) there is a high degree of mutual dependence in social groups, and (2) there are conflicts of interest hindering social support. In the small communities that characterized our evolutionary history, group members depended on one another for their mutual well-being. MDD symptoms like loss of interest in virtually all activities and suicidality would have put the well-being of all group members at risk. Individuals who were reluctant to help fellow group-members would have had little choice but to respond to the needs of a depressed and/or suicidal individual upon whom their own well-being depended. There is evidence from small scale societies that depression and particularly suicidality serve this social function (Hagen 2003).

It is therefore a prediction of the SNH, not evidence against it, that (1) negative life events will not cause MDD in all individuals—they will only cause MDD in those who need assistance *and* who have serious conflicts with important social partners. It is also a prediction of the SNH, not evidence against it, that MDD will often cause negative reactions in others because, under the hypothesis, it is a strategy to manipulate them by withholding benefits.

Contra Nettle, there is also evidence that in the context of social conflict and low support, depressive symptoms elicit social benefits *despite* the negative reaction they cause in others, enough so that researchers worry that these benefits reinforce depression (e.g., Sheeber et al. 2001).

We agree with Nettle that significant heritability in the capacity for MDD would be strong evidence against any adaptationist hypothesis for it. We see little evidence, however, that those who will never suffer MDD are genetically incapable of suffering it, regardless of life experiences or social context. Further, once genetic control of exposure to environments that predispose to MDD is taken into account, the direct heritability of MDD is quite modest (e.g., Kendler et al. 2002) and interpretable as normal variation in triggering thresholds of a complex, multi-gene adaptation.

Hagen (2003) shows how other MDD phenomena Nettle cites as evidence against the SNH can in fact be accommodated by it. Although the SNH is far from proven, given current evidence it is not easily dismissible.

Sincerely yours,

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References

- Hagen, E.H., 2003. The bargaining model of depression. In: Hammerstein, P. (Ed.), Genetic and cultural evolution of cooperation. MIT Press, pp. 95-123.
- Henderson, S., 1974. Care-eliciting behavior in man. *Journal of Nervous Mental Disorders* 159, 172-181.
- Kendler, K.S., Gardner C.O., Prescott C.A., 2002. Toward a Comprehensive Developmental Model for Major Depression in Women. *American Journal of Psychiatry* 159, 1133-1145.
- Segrin, C., Dillard J.P., 1992. The interactional theory of depression: A meta-analysis of the research literature. *Journal of Social & Clinical Psychology* 11, 43-70.
- Sheeber, L., Hops, H., Davis, B., 2001. Family Processes in Adolescent Depression *Clinical Child and Family Psychology Review* 4, 19-35.