

# Evolution is the scientific foundation for diagnosis: psychiatry should use it

**RANDOLPH M. NESSE**

Department of Psychiatry, University of Michigan,  
Ann Arbor, MI, USA

Psychiatry has struggled for centuries to get mental disorders recognized as diseases just like those in the rest of medicine. To pursue this goal, the DSM-IV and other new diagnostic systems define disorders based on the number, severity and duration of symptoms. The benefit is that two clinicians who examine the same patient will likely arrive at the same diagnosis. This seems scientific. At least we can measure something reliably!

However, as Wakefield points out, such diagnostic systems only appear scientific. They offer no basis for deciding what is a disorder, and what is not. Worse yet, while they are intended to make psychiatry more like the rest of medicine, they do the opposite. In the rest of medicine, doctors recognize disorders as conditions that arise from abnormal functioning of some useful system. They know the heart evolved to pump blood and that insufficient function results in congestive heart failure. Cardiac failure is the diagnosis whenever the heart is not performing its normal function, no matter what the cause.

The rest of medicine makes a sharp distinction between disorders and protective responses. This distinction is mostly missing in psychiatry. Renal failure, cancer and paralysis are disorders, but fever, cough and pain are not disorders, they are protective responses. Fever and cough regulation mechanisms can fail, but doctors hardly ever diagnose "fever disorder" or "cough disorder". Instead, they look for the problem that aroused these functional responses.

As Wakefield shows so clearly, psychiatric diagnosis ignores this fundamental distinction. Major depression is diagnosed whenever severe enough symptoms persist long enough, no matter what is happening in the person's life. The exception, the recent death of a

loved one, shows why considering context is essential. Good psychiatrists examine the patient's life situation in detail to try to understand whether the depression symptoms arise from a normal response to the current life situation, an abnormality of the mood regulation system, or, as is usually the case, some of both.

This essential distinction between reactive and endogenous depression was at the heart of DSM-II, but was eliminated in the DSM-III and IV. Ever since, psychiatric diagnosis has appeared objective, while in fact separating itself dramatically from diagnosis in the rest of medicine which relies on recognizing dysfunction. Why did psychiatric diagnosis exclude consideration of context? There are two obvious reasons.

First, when diagnosis depends on assessing the severity of life problems, reliability decreases. Whether or not loss of a job is sufficient to explain depression symptoms depends on how good or bad the job was, whether it can be easily replaced, and the person's financial situation. All of these factors involve somewhat subjective judgments. Making these judgments means that two diagnosticians will be less likely to come to the same conclusion.

This can be difficult, but the rest of medicine does not ignore context. For instance, when evaluating pain, physicians judge if this patient's pain is within the normal range given the nature of the organic lesion, or if the pain regulation system is not working properly. The decision is often difficult, but doctors do not duck the problem by using only the severity and duration of symptoms to determine if the patient has "pain disorder". Instead, they use all their knowledge and experience to try to decide if this patient's pain is a normal response, or if the system that regulates pain is abnormal.

The second reason psychiatric diagnosis ignores context is because the architects of the DSM-III were so desper-

ate to separate psychiatry from psychoanalysis that they decided to ignore all theory. As a result, we still lack the kind of functional understanding that physiology offers to the rest of medicine. However, a functional understanding is now available to psychiatry.

For instance, determining when an emotion is abnormal requires understanding what normal emotions are for (1). The same evolutionary thinking that has rapidly advanced the study of animal behavior is being applied to human emotions. Emotions evolved because they adjust the body to deal with situations that have occurred again and again over millions of years. No emotion is good or bad in general, and negative emotions such as anxiety and sadness are just as useful as positive emotions. Emotions are useful if they are expressed in the situation they evolved for, otherwise they are abnormal (2). We must learn to recognize those situations. More generally, individuals who lack emotions don't do well in life. On average, across evolutionary history, they had fewer children. People who have excessive emotions, or whose emotions are expressed in the wrong situation, also do not do well. A panic attack is life-saving when you are being chased by a lion but, in a romantic situation, panic can severely decrease reproductive success!

The judgment of dysfunction is based on understanding a trait's evolutionary function. This is exactly the same for psychiatry as it is in the rest of medicine. Wakefield argues persuasively that this provides a solid biological basis for deciding whether a condition is normal or abnormal (3). This seems radical, but it is, instead, a call to return psychiatric diagnosis to its proper grounding in biology (4). Adopting his perspective would bring psychiatric diagnosis back into the biological framework that functional understanding provides for the rest of medicine.

## References

1. Nesse RM. Evolutionary explanations of emotions. *Human Nature* 1990;1:261-89.
2. Nesse RM. Proximate and evolutionary studies of anxiety, stress, and depression: synergy at the interface. *Neurosci Biobehav Rev* 1999;23:895-903.
3. Wakefield JC, Horwitz AV. The loss of sadness: how psychiatry transformed normal sorrow into depressive disorder. New York: Oxford University Press, 2007.
4. Nesse RM, Jackson ED. Evolution: psychiatric nosology's missing biological foundation. *Clin Neuropsychiatry* 2006;3:121-31.