Culture, mental disorders, and evolutionary analyses

Literature on culture and mental disorders reflects notions of culture as something that people from non-white races have, or something that people from exotic, usually developing countries have. But culture, of course, is not only something that white first-world peoples have, but have in plural. For example, among Caucasian Americans exist blue-collar factory workers and middle-class professors, Southern Baptists and Unitarians, Midwesterners and Southerners (Cohen, Nisbett, Bowdle, & Schwarz, 1996), Internet junkies and the tech-phobic, Democrats and Republicans. My paper reflects definitions of culture available in the literature, but I have a broader definition and what I say applies to that as well. Culture involves loose clusters of socially supported knowledge and opinions often affected by chance historical factors. Cultures can be as small as a dyad or as large as a nation; which level you want to look at depends on which question you want to answer.

I'm interested in the implications cross-cultural variation in mental disorders holds for evolutionary research. I include historical variation in cultural variation. 18th-century North America, for example, is different in interesting ways from 21st-century North America. A disclaimer is in order: Sometimes people use cross-cultural variation to argue that something is "cultural," by which they mean to say it is highly malleable, "not biological," or somehow not as fixed, entrenched, or real as it would be otherwise. I do not mean to suggest or imply that phenomena that vary more by culture are any less real or deserve any less attention than those that are more universal. Nor do I believe that mental illnesses are abiological or that symptoms will vanish if we refrain from

diagnosing people. I do believe that cross-cultural variation presents us with both challenges and clues for evolutionary analyses, and examining that variation carefully can lead to productive theories and help us avoid some embarrassing ones.

I have grouped some relevant cross-cultural research under four questions about cultural variation, which I would consider prior to performing an evolutionary analysis on a mental disorder. The goal of this cultural analysis would be to get a better idea of what phenomena we are trying to explain and how their symptoms and course respond to cultural variation, especially if (as is sometimes the case) a disorder takes a noticeably different form in different cultures. For each of the four questions, I review relevant cross-cultural research and then discuss implications for conceptualizing what phenomena might have been available for selection pressures to act on. If you find the questions at all useful, I hope you will adapt them for your own use. They are:

- Are there overlapping diagnoses from other cultures/times, or diagnoses from other cultures that pick out symptom clusters we subsume under other diagnoses?
- What variation exists in whether an individual symptom is associated with other symptoms of the disorder?
- Is there variation in whether/how much the phenomenon is disordered?
- How culturally specific is the disorder?

Are there overlapping diagnoses from other cultures/times, or diagnoses from other cultures that pick out symptom clusters we subsume under other diagnoses?

There are some clear-cut, simple cases of individual mental disorders, where an individual is quite obviously experiencing one mental disorder and not any other. If

someone shows up in the clinic and is asymptomatic apart from severe fear of spiders, then a diagnosis of specific phobia is clear. But often instead of disparate clusters of symptoms, we see fuzzy, overlapping, sometimes-associated and sometimes-unassociated clusters of symptoms (Bradshaw & Sheppard, 2000; Mineka, Watson, & Clark, 1998). There are many clusters we could potentially pick out and then name, sometimes overlapping and sometimes at different levels of specificity. Which exact cluster or clusters we pick out as a thing to be described and named can vary with culture and time.

When we look cross-culturally at diagnostic criteria for a single disorder, it becomes particularly clear that we are selecting somewhat different but associated symptom clusters. Neurasthenia overlaps or is sometimes comorbid with chronic fatigue syndrome, anxiety, depression, and somatoform disorders, and the extent of overlap varies by culture (Starcevic, 1999). In the United States, diagnoses of neurasthenia (if given) are largely for symptoms identical to chronic fatigue syndrome, whose primary symptom is mental or physical fatigue following minimal effort (Starcevic, 1999). The American, British, and Australian diagnostic systems all vary slightly (for example, Australia requires evidence of cell-mediated immunity). The Chinese diagnostic system overlaps with the others, but does not require fatigue, and in practice, does not overlap with CFS.

Likewise, the same symptom pattern may be given different diagnoses. Baskin (1984) sent five anecdotal cases to professionals in 110 countries and asked for diagnoses, and found widespread disagreement among not only professionals in different countries, but, reflecting either multiple cultures within a country or problems with

diagnostic criteria, among professionals in the same country. For example, the same individual[1] was diagnosed variously as having adjustment disorder with mixed emotional features, schizoid personality, schizoid disorder, transient situational disorder, minor depression, inadequate personality, and no disorder. Another was diagnosed with borderline personality, psychosexual dysfunction, schizoid personality disorder, personality neurosis, cyclothymic disorder, chronic anxiety state, hysterical personality disorder, and character disorder.

We also sometimes select and label clusters of symptoms that would be subsumed under other disorders in other cultures. There is a diagnosis among some Latino groups, *ataque de nervios*, for symptoms including crying, trembling, screaming, and verbal or physical aggression (Lopez & Guarnaccia, 2000). This diagnosis picks out a set of symptoms that we do not, in the United States, have a label for, although it is not difficult to imagine people for whom all of the above would be frequently associated. Likewise with AIDS neurosis, the persistent delusion that one has contracted HIV in the face of contradictory evidence, in Japan (Miller, 1998). If clinicians in other countries were to see such symptoms, they would subsume them under a different diagnosis, most likely a more general one. "AIDS neurosis" is not a recognized thing in itself outside of Japan.

It's possible to attribute cross-cultural variation in definitions to insufficient knowledge or technology, to say that we don't know enough about what's going on to get things right. But it seems more plausible, given available evidence, that there are multiple

[1] "An 18-year-old male college student complains that his grades are average but will not enable him to eventually be accepted to a professional career. He says that he has a few friends among his peers, although he is rather shy with his female classmates. He is interested in dating but doesn't know whether he can muster up the courage, thereby risking rejection. He fears that he may not be living up to his

ways to parse up symptom space and that different cultures may simply hit on different ones.

When doing evolutionary analyses, talking about anxiety or depression (or neurasthenia or chronic fatigue syndrome) focuses us on a specific cluster of symptoms. It can be useful to shift the focus from sets of symptoms downward to individual symptoms (desire to retreat from others, combined desire to retreat + desire to please), and may be additionally useful to shift the focus over to partially overlapping diagnoses from other places or times (neurasthenia historically or in China), or to investigate clusters of symptoms that aren't, in our culture, selected out and labeled. We can look at disorders as discrete things, but selection pressures act on behaviors that are associated with each other to varying degrees, and sometimes to different degrees in different situations. This also encourages thinking about the phylogeny of symptoms and disorders: what symptoms might have been easily accessible in what situations and exaptable to new functions? Cultural variation in placing boundaries of disorders and in labeling disorders can help us keep in mind the extent to which we could draw boundaries in other places. (The degree to which we could reasonably do so will be different for different disorders, of course.)

What variation exists in whether an individual symptom is associated with other symptoms of the disorder?

Sometimes we see variation in mental disorders because different definitions pick out different areas of symptom space, as I discussed above. Sometimes they pick

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parents' expectations and is angry at his father for pressuring him to excel."

out similar areas, but associated symptoms in some cultures aren't associated (or aren't associated nearly as strongly) in others. The symptom space appears to differ, more than the definition of the disorder.

Depression in Western cultures frequently involves guilt and suicidal ideation, but in African cultures it more often involves somaticization and does not involve guilt or suicidal ideation, although there are substantial similarities: people in both cultures show depressed mood, motor retardation, and loss of interest in work and the environment (Binitie, 1975). Somaticization is also more common in Malaysian patients (Azhar & Varma, 2000) and in Far Eastern schizophrenic patients (Flaskerud, 2000). (To the extent this pattern holds up worldwide, it might make more sense to say that Western cultures psychologize depression.) One particularly interesting finding is that aspects that appear to cause other symptoms may be absent in some cultures. In some cultures, anorexia may typically occur without a distorted body image and fear of becoming fat, but instead with religious interpretations (Bennett, Sharpe, Freeman, & Carson, 2004 for Ghana; Lee, 1995 for China)**.**

Why these differences in symptoms? It's beyond my ability to figure that out, and so I'll leave it for people studying those topics, but I think it's particularly important to try to discover causes of cross-cultural variation in symptoms. Discovering relevant cultural/environmental factors and comparing their similarity to the EEA will have much to say about what behaviors or indicators were available for selection pressures to act on.

Is there variation in whether/how much the phenomenon is disordered?

Homosexuality refers to a fuzzy set of dispositions and behaviors that, for some

time prior to 1974 in the U.S., was classified as a mental illness according to the DSM. It no longer is, and is seen as fine in some cultures, but deviant and highly aberrant in others. In 1854, black slaves' attempts to escape slavery were classified as symptomatic of mental illness by a prominent physician (Beard, 2000), though we would be unlikely to classify them as such today. There is some variation across cultures in whether a given behavior is considered religious expression versus a symptom of mental illness (Prince, 1992), but this should not be taken to mean that there are cultures that do not distinguish between the two. For example, traditional healers in Bali sometimes display "initiatory madness" when first becoming healers, but this is seen as distinct from developing mental illness because it involves developing control over a kind of mental imagery (Stephen & Suryani, 2000).

People argue about whether cultural differences in diagnosis involve pathologizing normal behavior or normalizing deviant behavior, but it may be simplest to say that what is normal depends on its relation to context. It takes different motivations and needs to be openly gay in Iran than to be openly gay in San Francisco or at left-wing liberal arts colleges. Being shy and inhibited to a degree pathological in the United States can be normal or even valued in Chinese and Thai cultures (Flaskerud, 2000; Lopez & Guarnaccia, 2000). The extent to which people are able to negotiate a workable relationship with their culture's norms for behavior may be a more better of mental health than, for example, whether their beliefs reflect or fail to reflect reality (which is, for example, why culturally sanctioned belief in omnipotent beings is not a major mental health problem).

Variations in whether phenomena are seen as disordered versus normal highlight something we are familiar with from evolutionary theory: behavior maladaptive in some contexts may not be maladaptive in others. This approach also suggests a potentially important moderator of mental health: the ability to conform to local culture and negotiate space within that culture for one's own personal abilities and goals, especially if idiosyncratic. This may be an interesting potential line of evolutionary investigation in itself.

How culturally specific is the disorder?

Some mental illnesses appear in some places and not others. This is not simply a matter of parsing up symptom space differently, or of one or two symptoms being associated with the disorder in some cultures and not in others, but a matter of clusters of symptoms with blatantly culturally specific form and content appearing at some places and times and not at others.

Europe saw an epidemic of hysterical fugues in the nineteenth century. The *fuguers* would suddenly leave their present circumstances, often without more than the clothes on their back, and travel for weeks or months before suddenly 'coming to' in a foreign country with no memory of how they got there. This symptomatology was present for some time and then faded (Hacking, 1998). There are many syndromes seen only in non-European cultures that we often think of when we think of culture-bound syndromes: neurasthenia (Asia) and ataque de nervios (Latin America) as described above, susto (Hispanic; anxiety, vomiting, tachycardia, sweating, irritability); hwa-byung (Korean; epigastric pain, feeling hot, tiredness); voodoo or hex (Blacks/Latinos from U.S.

and Caribbean; malaise, chest pain, syncope, anxiety and fear) (Flaskerud, 2000); the belief that one is pregnant with puppies (rural West Bengal males - Chowdhury, Mukherjee, Ghosh, & Chowdhury, 2003), latah (Malayo-Indonesian cultures, exaggerated startle response - Bartholomew, 1997); koro (some Asian cultures, most common in China, fear of genital retraction - Sheung-Tak, 1996); and others.

Some symptoms and disorders are known to rise in prevalence in response to increased salience. For example, eating disorder awareness programs can increase eating disorder symptoms in the general population (Mann, 1997)**;** highly publicized suicides inspire copycat suicides (Stack, 1990)**.** North America saw an exponential rise in multiple personality disorders starting around 1980 that did not occur at all or to anything like the same degree in other countries, and was helped along by popular accounts (Hacking, 1995). This appears to be what happens with culture-bound syndromes. A particular expression of a disease, or culturally bound interpretation of symptoms, appears somewhere for idiosyncratic reasons; it then spreads because it happens to be memetic fit well with existing cultural beliefs, and because it offers a legitimate and meaningful way of interpreting symptoms and expressing distress. The ability to channel symptoms and distress into culturally legitimated forms – susto, multiple personality disorder, hwa-byung – may reflect both the ability to select (probably for the most part unintentionally) culturally recognized ways to communicate distress and a tendency to interpret one's own symptoms in line with culturally available explanations. Although I have no evidence, my guess is that distress is more likely to be communicated in this way when the sufferer lacks better outlets, has symptoms that don't match recognized

disorders, or lacks self-insight and looks to others for explanations of their feelings and behaviors.

Although these seem to be cultural phenomena in the sense of being highly culturally specific and not having much to do with what has evolved, I suggest they represent an especially interesting target for evolutionary analyses. Does the ability to channel one's symptoms and distress into a culturally supported mental illness (compared to not doing so) increase reproductive success? It may increase reproductive success by eliciting sympathy[2] or attracting attention because it by definition is a catchy, memorable kind of disorder. Alternately, these may not be enough to overcome the stigma and, often, further symptoms that go along with developing a mental illness. If it does increase reproductive success, one can argue that it is a manifestation of an evolved adaptation for compensating some kind of difficulty (distress, low status). If does not, it's a good puzzle. Perhaps it's an exploitation of the ability to conform to cultural roles, the exploitation arising from especially cognitively catchy interpretations of behavior that arise by chance, and are especially prevalent in modern populations due to our ability to rapidly spread ideas through media. If so, susceptibility to culture-bound illnesses may eventually disappear because it has become frequent enough to be selected against.

Conclusions

In closing, I would like to review the questions I've covered and the implications to the extent the answer is "yes" to any of them. I will also mention some things that look like cultural effects, but aren't. But first, a word about integrating a cultural

[2] Thanks to Michael Cohn for pointing this out.

perspective with an evolutionary perspective. In my experience, people in interdisciplinary areas often feel their area more essential to the main issue than do others. Especially in evolutionary approaches, they are frequently correct that their area is essential; you cannot know everything relevant about an evolved organism without knowing a massive amount about biology, genetics, complex systems, and for some organisms, developmental psychology, culture, and more. Consilience is great, but when the amount of essential areas one must know exceeds what one can learn in several doctorate degrees, suggestions for approaches can seem like attacks. I would like to stress that I think good evolutionary work has been and continues to be done on phenomena affected by culture without considering the effects of culture. I think that, like many other approaches (developmental, complex systems, and so forth) to evolutionary theorizing, addressing culture by considering cross-cultural variation or examining enculturation can bring useful perspectives and help avoid embarrassing ones. It can also be a great deal of fun.

Are there overlapping diagnoses from other cultures/times? Are there diagnoses from other cultures that pick out sets of symptoms that we subsume under other diagnoses?

If so, it could mean, of course, that someone has the wrong diagnosis, but it could also mean that there is some fuzziness in what is actually going on and hence a wider range of things that selection pressures could have potentially acted on. Or it could mean that there are some differences in the degree with which different symptoms are associated. Looking at differences in what, as far as you can tell, might be the relevant aspects of the cultures and how they differ from what we know of the EEA may be

helpful in thinking about what behavioral phenotype would have been available for selection to act on.

What variation exists in whether an actual symptom is associated with other symptoms of the disorder?

Cross-cultural variation in symptoms, especially absence of symptoms we think core to the disorder, such as fear of fat in anorexics, may entirely change our view of the cultural and/or environmental triggers that trigger onset or affect course. This is very relevant for pinning down what EEA phenomena the disorder we're seeing now may be a distorted version of.

Is there variation in whether/how much the phenomenon is disordered?

As above, comparing relevant cultural differences (and figuring out what is relevant may be the hard part) to what we know of the EEA can help figure out to what extent we ought to be trying to explain the behaviors of the individual and to what extent the features of the culture that make the behavior problematic. In addition, because cultures do display important differences and being able to adapt can create reproductive success, it may be useful to investigate the ability to conform to culture but still negotiate space for oneself as a potential evolved adaptation.

How culturally specific is the disorder?

To the degree the disorder is culturally specific, the relevant evolutionary explanation may be the same as what I've suggested for other culturally specific disorders: an evolved tendency to select culturally available and culturally legitimated forms for expressing distress. Whether that's true in some culture-bound disorders, and

whether it's the same for all culture-bound disorders, remains to be seen.

Finally, I've talked about culture as a causal force in mental disorder definitions, symptoms, and creation, but the arrow can run the other way, from mental disorders (or tendencies) to culture. Mental disorders can influence assortative mating and deliberate selection of friends and subcultures. Genetic variation between groups could affect mental disorders. And culture may be involved merely in a superficial sense, in that historical factors make some cultural groups more likely to be exposed to toxins, pathogens, and poor nutrition.

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