This volume brings together a collection of seven articles previously published by the author, with a new introduction reframing the articles in the context of past and present questions in anthropology, psychology and human evolution. It promotes the perspective of ‘integrated’ social science, in which social science questions are addressed in a deliberately eclectic manner, combining results and models from evolutionary biology, experimental psychology, economics, anthropology and history. It thus constitutes a welcome contribution to a gradually emerging approach to social science based on E. O. Wilson’s concept of ‘consilience’.

Human Cultures through the Scientific Lens spans a wide range of topics, from an examination of ritual behaviour, integrating neuro-science, ethology and anthropology to explain why humans engage in ritual actions (both cultural and individual), to the motivation of conflicts between groups. As such, the collection gives readers a comprehensive and accessible introduction to the applications of an evolutionary paradigm in the social sciences.

This volume will be a useful resource for scholars and students in the social sciences (particularly psychology, anthropology, evolutionary biology and the political sciences), as well as a general readership interested in the social sciences.
Abstract. How is mental dysfunction detected? How do cultural models of mental disorder affect this process of detection? Attempts to answer these questions have not often been made in the research, as they fall between two domains: that of cross-cultural psychiatry (which looks at the dysfunction itself) and anthropological ethno-psychiatry (which looks at cultural models of sanity and insanity). In this paper, I set out a model to illustrate this ‘missing link’ between behavior and cultural models, founded on experiential evidence for intuitive psychology. Typical adult minds contain certain intuitive expectations about mental function and behavior, and these are used to perceive certain sorts of dysfunctional behavior. It appears that there is a ‘catalogue’ of potential behaviors that activate this intuition, and therefore the symptoms that are present in culturally specific folk-understandings of mental dysfunction are also restricted. It is also suggested that certain mental dysfunctions are ‘invisible’ to folk-understandings due to their lack of obvious breaches of principles of intuitive psychology. This standpoint helps us to

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1 Some of the contents of this chapter have been expressed earlier in Boyer, P. (2010) Intuitive Detection of Mental Disorder: Cognitive Background to Folk-Psychiatries, *Philosophical Psychology* 23(6): 821–844. https://doi.org/10.1080/09515089.2010.529049

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1. Introduction

The concept of mental disorder is one which exists across the world—people in each and every country have a certain way of classifying and modelling this notion. This leads us to pose several questions: do those in different groups and communities view the concept of mental disorder as consisting of similar aspects? Are there limitless ways to envisage the concept or are our categorizations based on some common underlying principles? If these principles exist, where did they emanate from, and do they have influence over the purportedly scientific models and classifications in psychiatry?

These questions were traditionally approached by two disparate disciplines: cross-cultural psychiatry—a branch of mainstream psychiatry — and ethno-psychiatry, stemming from cultural anthropology. This disparity has led to various theoretical problems and uncertainties, which may yet be overcome by the advances in intuitive psychology (or ‘theory of mind’) and in the psychology of culture. We are now able to set forth a synthetic model which suggests that all normal adult minds across the world contain certain intuitive expectations about normative mental function and behavior, based on common underlying principles. These expectations are constrained by intuitive psychology, which influences both the detection of disorder (through affecting people’s recognition of certain kinds of behavior as symptomatic of mental dysfunction) and the explanation of disorder. Thus, it seems that, despite the very different cultural conceptions of sanity and mental dysfunction, the underlying principles are simple and the same.

2. A Prototypical Scenario and a Question

The social interactions that we will consider throughout this paper usually take the following form:

1. An individual experiences some type of mental dysfunction.
2. Other people begin to notice that individual’s behavior:
   a. At a certain point, the individual’s behavior subverts the expectations of the other people involved in an interaction;
   b. The behavior cannot be easily or logically explained or repaired, and/or:
   c. The behavior is repeated, or similar behavior occurs, with similar results (lack of clear or logical explanation).
3. People perceive the individual to be experiencing an example of D, a local category or set of possible categories that fit(s) this type of discernible behavior.
4. A causal model of D is considered, which aligns with a locally, personally or culturally wide-ranging explanatory model M for these people.
5. People contemplate how the perceived issue could be effectively diminished.

Cross- (or trans-) cultural psychiatry predominantly focuses on step [1], attempting to discover the limits of variation within mental dysfunction, subject to cultural background (Stein, 1993). Inversely, ethno-psychiatry predominantly focuses on steps [3–5], delineating the models or suppositions lying beneath certain kinds of nosography and etiology, as well as contemplating treatment, the potential for specialist care, and the effectiveness of different techniques (Jovanovski, 1995).

It is notable that neither of these disciplines mentions the cognitive processes through which mental disorders are recognized (step [2] of the above scenario). Georges Devereux, a founder of modern ethno-psychiatry, comments:

The patient appears on scene—on the printed page [in ethno-psychiatric monographs]—as an already recognized and more or less completely diagnosed neurotic or psychotic, with no mention of the manner in which this status—for a status it is!—has been assigned to him. (Devereux, 1980) p. 247

While evidence from history and cultural anthropology has made us aware that steps [3–5] in the above scenario vary around the world, no principled model exists to illustrate the potential for variation in the
area of detection ([step 2]), and there is additionally no formal research on the topic.

In order for us to understand how mental disorders are detected, we should examine whether common principles that underlie regular cognitive function play a part. In doing so, we extend the existing research program that explores cultural phenomena as bounded variations within limits set by human cognitive capacities (Sperber & Hirschfeld, 2004). Research performed by cognitive scientists and evolutionary anthropologists has found that the underlying principles we develop at a young age lead to suppositions that help us to acquire our specific cultural norms and ideas — for example, in the areas of folk-biology (Atran, 1990, 1998), kinship and ethnic categories (Hirschfeld, 1994a, 1996), racial categories (Kurzban, Tooby, & Cosmides, 2001), religious beliefs (Atran, 2002), social interaction (Cosmides & Tooby, 1992); (Fiske, 1992); (Tooby & Cosmides, 1996). As a result, we would expect that these underlying principles would also have an influence over how we determine what is acceptable versus atypical behavior.

3. The Background: Intuitive Psychology Expectations

The term ‘intuitive psychology’ straightforwardly describes the collection of cognitive capacities that help us to understand our own and others’ behavior as the result of unobservable mental states and processes (Baron-Cohen, 1995), (Leslie, 1987), (Perner, Leekam, & Wimmer, 1987). The majority of these capacities are subconscious in function — we are unaware of the inferential processes that lead us to establish overt explanations of other people’s behaviors. The capacities are likely to be situation-specific and distinct from each other, each with their own lower-level neural sub-capacities (C. D. Frith, 1996). We have only gradually begun to be able to (tentatively) describe the capacities involved in normal, adult intuitive psychology—our initial, more detailed descriptions came from instances where the system does not function, such as in autistic children or in animals from other species.

In this paper, we can limit our concentration to only the most basic intuitive principles involved in the process. Whilst there are key theoretical disparities between models of intuitive psychology, it is fortunate that its core standards are remarkably uncontroversial, and include:
6. Detecting Mental Disorder

[1] Intentional states; representations of our existing apparent realities. One notion of intuitive psychology is that people’s minds have memories, beliefs, and perceptions ‘inside’ them, which represent or duplicate the conditions in a person’s physical reality. Children realize from the age of three that mental representations are not physical objects (Wellmann & Estes, 1986). Beyond that age, we progressively cultivate the idea that our thoughts contain a representation of the circumstances surrounding us—there is a causal link between manifest states of affairs and mental representations (Leslie, Friedman, & German, 2004). Additionally, we use indirect cues — such as the extent to which people’s gaze follows objects and other people’s gaze—to subconsciously confirm the link between external objects and people’s mental states (Friesen & Kingstone, 1998). Broadly speaking, by seeing that an object aligns with and seems to ‘attend’ to another object, we get a strong indication that it is an intentional agent (Johnson, Slaughter, & Carey, 1998).

[2] Agency as internal causation. One of the first assumptions that infants make is that agents, unlike other objects, decide their own behavior from within (Baldwin, Baird, Saylor, & Clark, 2001); (Rochat, Morgan, & Carpenter, 1997). This assumption is founded on the particular psychophysics of animate motion (Michotte, 1963); (Schlottman & Anderson, 1993); (Tremoulet & Feldman, 2000) and on additional cues that reveal internal causation and production of behavior (Gelman, Durgin, & Kaufman, 1995); (Williams, 2000). Intentional agents’ actions relate to objects and states in a principled way (Blythe, Todd, & Miller, 1999), and even infants can decode their orientations — for example, by reaching a specific object of interest and avoiding obstacles (Csibra, Gergely, Biro, Koos, & Brockbank, 1999); (Gergely, Nadasdy, Csibra, & Biro, 1995). Attributing more intangible intentions to objects is something that children learn to do at a young age, such as by emulating effective rather than ineffective actions in the handling of tools (Want & Harris, 2002) and using actors’ visible emotions to deduce the effectiveness of the action (Phillips, Wellman, & Spelke, 2002).

[3] Memory as a store. Throughout the world, the inherent idea of memory as a store is pervasive and meaningful—to the extent that even certain scientific models of memory processes are based upon it (Roediger & Geraci, 2004). While research has not focused on this theme, intuitive psychology also appears to accept the copying of experiences
onto memory stores and their later retrieval in the configuration in which they were experienced, which is in conflict with a large amount of psychological research into human memory (Ross & Wilson, 2000); (Rubin, Schrauf, & Geenberg, 2003).

[4] **Inferential and communicate coherence.** In order to communicate, we must make inferences and follow strict, implicit pragmatic principles (Grice, 1975) which we develop at a very young age. These principles influence infants’ communicative development (Trevarthen & Aitken, 2001) and acquisition of new vocabulary (Bloom, 2000). We generally cannot interpret others’ utterances or communications without comprehending the speaker’s intentions—the way in which they are trying to influence the listener’s representations (Noveck & Sperber, 2004); (Sperber & Wilson, 1995). During conversations, implicit adaptations and small ‘repairs’ allow people to sustain comparable representations of the circumstances they are discussing.

[5] **Emotion, norms and empathy.** We build much of our information about other people’s mental processes on the inadvertent reading of minute emotional cues — such as facial expressions, voice and gestures — and of the potential reasons behind them. Again, this ability evolves from a young age—at five months old, infants behave differently when faced with demonstrations of different emotions on a familiar face (D’Entremont & Muir, 1997). Different cultural groups develop comparable cues at similar times (Ekman, 1999). To detect and recognize certain kinds of emotions, specific neural circuitry is required (Kesler-West et al., 2001), separate from broader facial identity processing.

If cues are lacking, we use our inherent psychological principles to deduce what the emotional repercussions of certain circumstances would be. A substantial database of certainties about social relations is necessary in order to do this—we need to recognize the emotions that influence the different types of relationships, from family to partners, friends to acquaintances, and so on.

People tend to assume that those who are part of their cultural group adhere to the cultural norms to an equivalent extent—these norms explicitly prescribe behavior, which is connected to emotion or attitude (Nichols, 2002a). Assumptions about emotions originate from a broad ability to be empathic using simulation—such as internally simulating our own emotions resulting from a situation in order to perceive
others (Decety & Sommerville, 2003). Our inherent expectations about emotionally relevant hypotheticals (such as deducing how somebody feels when their family is threatened, or when they are abandoned by their friends) could also be founded on this sort of simulation (Gordon & Olson, 1998).

[6] *Principled motivation.* Intuitive psychology comprises a particular model of how intentions are connected to available information and background preferences (Malle, 2004). It also differentiates desire and intention—desire is seen as a simple preference state, and intention is seen as the fusion of that state with available information to produce a plan of action (Malle & Knobe, 2001). Intentions are presupposed to make the attainment of desires and goals more probable. Children appear to develop their understanding of desire and intention before the age of three (Wellman, Phillips, & Rodriguez, 2000). They view desires as foundational when clarifying behavior, to a greater extent than physiological states (Moses, Coon, & Wusinich, 2000), but even young children appreciate that desires may clash (Bennett & Galpert, 1993).

*And numerous other principles.* This list of inherent principles is merely a summary of research in this area—it does not assert that there is concurrence on the functioning of intuitive psychological capacities in this field. With the completion of more research, we may be able to expand the list, but the key points at present are the generally undisputed findings above. Later in this paper, the restrictions of intuitive psychology will be further discussed, but it is now pertinent to discuss the way it is used to comprehend the perception of mental disorders.

### 4. Intuitive Catalogue of Detectable Mental Dysfunction

We can now attempt to detail the potential types of evident mental disorder using the broad inherent principles of intuitive psychology. Table 1 below details a list of assumptions and behaviors that defy these assumptions.

This list is not exhaustive—it is merely an initial attempt to illustrate that intuitive psychology does tacitly anticipate particular manifestations
of mental disorder. Below, the items in the list are discussed in more depth, correlating with the categories introduced in the previous section:

[1] *Intentional states; representations of our existing apparent realities.* Our inherent presuppositions about intentionality are violated when an individual does not react to occurrences (for example, if they are in a vegetative state, hebetude, or coma) or to noteworthy stimuli (for example, if their reflexes are lacking or have declined, they neglect to gaze at moving objects, or display general indifference). Similarly, individuals who do not follow culturally appropriate types of gaze following and direct gaze cause a similar violation.

[2] *Agency as cause of behavior.* In this area, potential indications of atypical functioning comprise involuntary motor behavior (such as Vitus, tics, or alien hand), and circumstances where an individual’s intention and action appear not to correspond (for example, if they are surprised by their own actions). Involuntary speech that flouts social norms (such as in Tourette Syndrome) are recognized in the same manner.

[3] *Memory as a store.* This model hypothesizes that memory impediments would be interpreted as leakage. Unlike in scientific models, failing to recall a recent, common occurrence would be viewed as a procedure of deletion, rather than a breakdown in organization or encoding.

Table 1. Inherent expectations and corresponding potential violations.
Table by P Boyer.

<table>
<thead>
<tr>
<th>Intuitive assumption</th>
<th>Potential disruption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Intentional states, representation of external states of affairs</td>
<td>Vegetative, unconscious states</td>
</tr>
<tr>
<td>1b. Direct perception of what is manifest</td>
<td>Failure to register or react to what’s around, illusory perception of non-existent states of affairs</td>
</tr>
<tr>
<td>1c. Perception causes belief</td>
<td>Beliefs or other mental states causing perception</td>
</tr>
<tr>
<td>2a. Agency: Motor behavior as result of inner intentional states</td>
<td>Apparently unintended gestures or complex behaviors</td>
</tr>
<tr>
<td>2b. Agency: Speech controlled by intentions</td>
<td>Talking in strange voices, unexpected changes in intonation</td>
</tr>
</tbody>
</table>
**Intuitive assumption** | **Potential disruption**
---|---
2c. Agency: Self is the origin of intentions | Involuntary action
2d. Unitary self | Dislocation, appearance of different personalities
3a. Memory as a store | Loss of material
3b. Memories caused by experiences | False memories, memories influenced by beliefs
4a. Coherence in inferences from states of affairs | Inferential non-sequiturs, e.g. goals divorced from present situation
4b. Coherence in communication | Conversational non-sequiturs, unexpected changes of topic
5a. Emotions in tune with outcomes | No emotional reaction, emotions not suited to outcomes
5b. Emotional empathy | Failure to empathize
5c. Feelings towards kin | Hostility to kin, neglect
5c. Moral feelings towards non-kin | Behavior not driven by moral imperatives; opportunism; exploitativeness
5d. Feelings about cultural norms, within-group solidarity | Indifference to cultural norms & etiquette, deliberate violation
6a. Motivation towards external goals | Lack of motivation
6b. Motivation in tune with valence of potential outcomes | Desire to bring about negative outcomes / not cause positive ones
6b. Motivation proportional to value of outcomes | Excessive investment in low-value outcomes or converse misjudgment
Others... | Others...

[4] *Inferential and communicative coherence.* An inability to sustain coherence within a conversation would activate the perception of disordered mental processes, as we can see from the clinical accounts of many types of mental disorder—senile dementia and Alzheimer’s are often both detected through the manifestation of violations of the principles of pragmatic relevance (Hays, Niven, Godfrey, & Linscott, 2004). As a result, caregivers must slowly modify their expectations of conversations with patients, adapting to their lack of responses, ‘repairs’, or strategies to diminish ambiguity or misunderstandings (Orange & Zanon, 2006). Likewise, the speech of schizophrenic patients often contains instances of wrong speech-acts, flouting of turn-taking, referential ambiguity (i.e. using pronouns without their referents), lack
of repair, referential incoherence—where multiple subjects are covered in the same statement (Corcoran & Frith, 1996); (Meilijson, Kasher, & Elizur, 2004)—and diminished comprehension of figurative speech and proverbs (Brüne & Bodenstein, 2005).

[5] *Emotion cues.* Individuals recognize when another person seems impassive in response to others’ emotional cues, or exhibit unintelligible emotional cues themselves—for example, patients with dementia experience diminished control over emotional expression (Smith, 1995). Schizophrenic patients are often impeded in the perception and analysis of emotional cues, and in the same way, so are autistic children, even high-functioning or Asperger patients (Teunisse & Gelder, 2001). Those with autism find it extremely difficult to recognize emotional cues (Adolphs, Sears, & Piven, 2001), which is exacerbated by their struggle to comprehend the potential basis for others’ emotions.

Any breaches of cultural norms or other emotional expectations should be conspicuous. While breaches of etiquette, for example, will not necessarily be perceived as indicative of atypical mental processes—they might instead indicate aggression or poor childhood experiences—persistent breaches with no explanation may be seen as confirmation of disorder (see Clement, 1981, #1956 for an account of this in Samoan culture). Breaches of familial expectations (for example, neglect or abuse towards family members) may also be seen as indicators of basal dysfunction.

[6] *Motivation.* Behaviours that seem to conflict with or oppose a person’s own preferences would likely be detected as a disturbance in cognitive functioning. Additionally, individuals with low motivation (‘indifference’) or, in contrast, those who are highly motivated—to the point of mania—would be contenders for detection. For example, those with schizophrenia are often found to have low levels of motivation, just as high-risk children do (Watt, Grubb, & Erlenmeyer-Kimling, 1982). Similarly, Alzheimer’s is frequently detected at an early stage via the degeneration of motivation, past what would be expected for those who are ageing (Ready, Ott, Grace, & Cahn-Weiner, 2003).

The above table does not constitute a list of potential types of mental disorder—it merely looks at the circumstances or behavioral events that could lead to the perception of atypical mental processes. At this point, we have no presuppositions about whether natural or sound instances of mental disorder can be detected consistently via intuition.
5. An Illustration: Mohave Cases

In order to connect a range of observed behaviours with the intuition of disorder, the dysfunction-detection model is suggested. Cases outlined by George Devereux in ‘Mohave ethnopsychiatry and suicide’ (1961) are useful demonstrations of the model—Devereux details a number of varying case-histories, in detail, separate from his and others’ analyses of the behavior, which is an approach scarcely found in ethnopsychiatric ethnography. This permits us to notice the initial perception of the behavior as extraordinary and the later categorisation of it as an example of culturally specific dysfunction. In Table 2 below, all symptoms outlined within case-studies are set out—only behaviors described by participants, excluding the ethnographer and other investigators, are included.

We can presuppose that the disclosure of these utterances indicates that individuals thought the accounts of behavior were pertinent and indicative of an intrinsic disorder or condition. It is significant, therefore, that the majority of the utterances describe obvious breaches of inherent psychological expectations (compare Table 2 with Table 1). As mentioned previously, psychological contraventions often appear alongside other norm-contraventions, but the list additionally indicates that the psychological contraventions are recognized and acknowledged without fail. For example, a woman is reported to be a nymphomaniac (case-study 14), but for a Mohave onlooker, a salient aspect of the situation is that she was sometimes unaware of what she was doing. Similarly, losing consciousness during epileptic fits (case-study 6) is made significant by the individual not experiencing pain. An anti-social person (case-study 20) is additionally reported to be misled (‘he seemed to believe he was going to war’).

Naturally, this is not intended as overwhelming proof for the violation-detection model. That would necessitate a detailed examination of case-studies pertaining to a range of cultural environments, beyond what can be achieved in this paper. The intention here is to exemplify that breaches of psychological expectations are core to the perception of putative dysfunction. In fact, out of all the cases detailed by Devereux, only one (case-study 23) describes atypical or improper behavior (beating one’s in-laws) that could be interpreted in any way other than psychologically.
Table 2. Collation of symptoms outlined in Devereux’s case-studies. First column, case-study number; second column, page in Devereux (1961). Third column, quotation from the case-study. Fourth column, principles from Table 1 that may be breached in that case.

<table>
<thead>
<tr>
<th>Case</th>
<th>p.</th>
<th>Description</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>40</td>
<td>A certain man would get sudden fits of rage, take a stick and beat up people. He lived apart from others.</td>
<td>5a</td>
</tr>
<tr>
<td>C6</td>
<td>73</td>
<td>During one of his atcoo: r hanyienk seizures he fell into the fire, burning his hand quite badly. He did not seem to have any feeling (sensitivity) when he burned himself.</td>
<td>1b</td>
</tr>
<tr>
<td>C7</td>
<td>74</td>
<td>Suddenly he got up and made a choked, panting noise, which sounded like “ak’”.</td>
<td>2a</td>
</tr>
<tr>
<td>C12</td>
<td>75</td>
<td>Suddenly he saw him fall down on the sidewalk and “act crazy.”</td>
<td>2a</td>
</tr>
<tr>
<td>C13</td>
<td>78</td>
<td>When one spoke to her, she could not keep her head still, but kept looking around.</td>
<td>2a</td>
</tr>
<tr>
<td>C14</td>
<td>79</td>
<td>I was told that even in her old age Nyortc still “copulated around,” and that she was ya tcahaetk, i.e., a nymphomaniac. She just did these things without knowing it; although sometimes she did know it.</td>
<td>5d</td>
</tr>
<tr>
<td>C19</td>
<td>87</td>
<td>One night, for no known reason, Uto : h cohabited with [had sex with] his younger daughter.</td>
<td>5d</td>
</tr>
<tr>
<td>C20</td>
<td>96</td>
<td>He became angry and began to say that he was constantly thinking of killing. […] He painted his face black, like a warrior going on a warpath, and actually seemed to believe that he was going to war.</td>
<td>4a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1c</td>
</tr>
<tr>
<td>C21</td>
<td>96</td>
<td>He cut off his long braids of hair, the way mourners do, and painted his face black. He declared that he would kill anyone who tried to come in.</td>
<td>4a</td>
</tr>
<tr>
<td>C23</td>
<td>97</td>
<td>She picked up a stick and went to her former husband’s new residence and “just beat up everybody in that damn place.”</td>
<td>4a 5c</td>
</tr>
<tr>
<td>C25</td>
<td>114</td>
<td>She just had a tired feeling all the time. She had no appetite.</td>
<td>6a</td>
</tr>
<tr>
<td>C31</td>
<td>142</td>
<td>Periods of excitement, during which it was necessary to chain or tie her to her bed.</td>
<td>2a</td>
</tr>
<tr>
<td>C32</td>
<td>144</td>
<td>While she was insane her father and her mother came to her. First they called her, and then they ran away. My mother ran away, people immediately ran after her. They must have been the ones she mistook for big balls that seemed to be chasing her.</td>
<td>1c</td>
</tr>
<tr>
<td>Case</td>
<td>p.</td>
<td>Description</td>
<td>#</td>
</tr>
<tr>
<td>------</td>
<td>----</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>C33</td>
<td>144</td>
<td>One day this old woman ran away from her daughter’s house, went down to the riverbank, fell into the mud, and remained there for 2 days.</td>
<td>6b</td>
</tr>
<tr>
<td>C34</td>
<td>145</td>
<td>He was sane right up to his death and did no insane talking. He could not move at all.</td>
<td>2a</td>
</tr>
<tr>
<td>C35</td>
<td>146</td>
<td>He was unable to get around. He said just anything; sometimes he would even call out the names of all his dead relatives. He would try to get up and pick up anything within reach and would then throw these objects around.</td>
<td>2a</td>
</tr>
<tr>
<td>C36</td>
<td>147</td>
<td>He dreamed that he was visiting his father and his mother, who had died, and toward the end of the dream he even ate food prepared by his dead relatives. Every time he ate anything, he would vomit it out again.</td>
<td>6b</td>
</tr>
<tr>
<td>C37</td>
<td>148</td>
<td>People who saw him asked him why he cried, but he replied that he did not know.</td>
<td>5a</td>
</tr>
<tr>
<td>C38</td>
<td>149</td>
<td>She began to talk about anything at all and kept on raving for about half an hour. At times she rose from her bed as though she were well, and then suddenly tore off her clothes.</td>
<td>4a</td>
</tr>
<tr>
<td>C52</td>
<td>203</td>
<td>The charm brought him luck for a while, but, in the end, it “turned against him,” and paralyzed his tongue.</td>
<td>4b</td>
</tr>
<tr>
<td>C53</td>
<td>205</td>
<td>One of them became so indignant that he got drunk, came back to where his oldest brother kept his vigil and stabbed him.</td>
<td>5c</td>
</tr>
<tr>
<td>C58</td>
<td>207</td>
<td>He could no longer speak. He was in a kind of daze. He never acted as though he knew or understood what was going on. He just sat there.</td>
<td>1a</td>
</tr>
<tr>
<td>C61</td>
<td>218</td>
<td>She just kept on laughing and seemed unable to stop. We just watched her and let her laugh, until she sat down and fell asleep.</td>
<td>5a</td>
</tr>
<tr>
<td>C62</td>
<td>218</td>
<td>A Pueblo Indian girl of 17 began to laugh hysterically and could not stop laughing, even when people slapped her and told her to stop it. She didn’t even seem to hear what was said to her.</td>
<td>5a 4b</td>
</tr>
<tr>
<td>C68</td>
<td>247</td>
<td>He had a tic since childhood. It consisted of occasional spastic movements of the face.</td>
<td>2a</td>
</tr>
</tbody>
</table>
6. Scope and Limits of Intuitive Psychology Principles

Intuitive psychology comprises a collection of critical inferential systems that function straightforwardly in general, giving us an analysis of perceived behavior with regard to beliefs, purposes, and emotional states—this is known and accepted. It is suggested here that, in the same way, intuitive psychology helps us to discern that a certain individual’s mind is dysfunctional; this is the only clear explanation for the individual’s behavior breaching the inherent psychology expectations. This model gives inherent psychological expectations the main causal role — it would thus be useful to define their key characteristics.

Are the principles universal? The core question is whether these principles are replicated across the world—do individuals in different cultures possess the same intuitive psychology? It is clear that much of our cognizance of behavior originates from local norms and beliefs about the right way to behave. As a result, individuals’ overt interpretations of mind vary significantly (Lillard, 1997; Vinden, 1998), at least in the case of those individuals who attempt to produce an interpretation. However, there is no corroboration of comparable variation within the principles of intuitive psychology themselves—literature from around the world has not found that individuals in different communities decline to orient to the principles above (Table 1) or follow completely different principles (Leslie, 1994; Sperber & Hirschfeld, 2004). The majority of applied studies have looked at developmental features of intuitive psychology, discovering a large amount of overlap in early intuitive psychology principles (Astuti, 2001; Avis & Harris, 1991; Tardif & Wellman, 2000; Yazdi, German, Defeyter, & Siegal, 2006), the timescale of their development (Callaghan et al., 2005; Wellman & Fang, 2006), and their relationships to other mental processes (Chasiotis, Kiessling, Hofer, & Campos, 2006). If we observe the profuse amount of verification for early development of brain structures in line with intuitive psychology, this is to be expected (C. D. Frith, 1996; Luo & Baillargeon, 2007).

Are intuitive principles a conjecture of rationality? Psychological expectations should not be understood as an assumption of rationality, nor muddled with the broad presupposition that ‘people generally behave rationally.’ In fact, it seems clear that intuitive psychology is made
up of exact, situational expectations and deductions—not an inferential hypothesis of the way individuals behave. Research has shown, for example, that even at an early age, we envision that people’s beliefs are shaped according to their observations, rather than their observations being shaped by their beliefs (Leslie et al., 2004), and as a result, we have specific assumptions (e.g. ‘X saw a dog here, so X believes there’s a dog here’). However, this principle has not been shown to be related to a broader presupposition of people behaving logically the majority of the time—in contrast, we often expect others to behave illogically. Many cultures presuppose that in situations where an individual is angry (and other similar situations), they are likely to act in a way that they will find regrettable afterwards.

Intuitive principles are not fixed—they can be both reinforced or dismissed when additional context-specific considerations are taken into account. For example, while small children presuppose that the presence of an object A will be detected by everyone in the vicinity, this presupposition can be overcome if there is an obvious obstruction to other people’s perception of object A (Luo & Baillargeon, 2007). Intuitive psychological analysis of behavior is, for the most part, a kind of relevance process, consisting of a detailed succession of presuppositions which lead to an optimal interpretation of the observable behavior (Sperber & Wilson, 1995). There is an unlimited set of circumstances where perceptions and beliefs do not match up—the principles of intuitive psychology are merely preset assumptions, with ‘all else being equal’ (Leslie, German, & Polizzi, 2005).

This should also be true for the discernment of dysfunction that occurs when presuppositions are breached, which would explain the variance of behaviors that precipitate such a discernment across culture and history. For example, in the past, speaking aloud in public when no other conversational partners were present was viewed as indicative of dysfunction in many parts of the world, but this behavior has come to be expected, and it is presupposed that the individual is likely to be on the phone. Mental dysfunction is perceived as a result of a network of illative operations, which may either support or weaken the original intuition.

Intuitive principles are not invariably correct. In the field of philosophy, it is still being debated as to whether the constructs that
our psychological expectations predicate (such as beliefs, purposes, emotions, etc.) are ‘really real’—whether our intuitive psychology has scientific value (Churchland, 1981). However, this discussion is immaterial for our purposes, as we are focusing on the way in which intuitive psychology functions, and not whether it does so correctly or not. This should be noted as we move to discussing our inklings of dysfunction. These inklings that are activated by an individual’s behavior in a certain context may be erroneous. Broadly speaking, the set of behaviors that lead to such discernments may be divergent—in the fields of established neuro-psychology or psychiatry, they may be classified separately. Our perceptions of dysfunctional behavior might only have a minor overlap with true dysfunctionality. In fact, many types of dysfunction are likely to go undetected by intuitive psychology.

Are presumed dysfunction and broader norm-violation alike? It could be questioned whether breaches of psychological expectations are actually the basis for the perception of dysfunctional behavior—some might argue that they relate back to a more general defiance of social norms. For example, if someone declines to respond to a question, they are not only breaching a psychological expectation, but also flouting the rules of conversation; similarly, a sociopath who lacks remorse after causing pain is not only behaving atypically, but also flouting the social rules that surround violence.

However, this straightforward, domain-general analysis is not supported by research findings. Studies in the areas of behavioral and developmental neuropsychology and neuroscience show that intuitive psychology is domain-specific—its inputs and principles are separate from those contained within other mental systems (Blakemore et al., 2001; U. Frith, 2001; Leslie et al., 2004). There is an overwhelming lack of convincing affirmations for the existence of cognitive mechanisms that survey norms (and their violations). Instead, we find evidence for highly specific mechanisms that keep track of violations of moral imperatives as distinct from social conventions (Haidt, Kesebir, Plessner, Betsch, & Betsch, 2008; Turiel, Eisenberg, Damon, & Lerner, 2006); violations of exchange principles and economic fairness (Cosmides & Tooby, 1992; Kurzban, 2001); violations of incest revulsion (Lieberman, Tooby, & Cosmides, 2007); betrayal of the implicit requirements of friendship (Hess & Hagen, 2006), and violations of status and manners.
These kinds of violations all transpire in a certain type of situation, due to certain sorts of purposes. A broad operation that monitors their concurrent features does not seem to exist.

These conclusions lead us to suggest that manifest breaches of presuppositions lead to a certain sort of ‘dysfunction intuition’ that differs from the contravention of other norms. This intuition might be supported, altered, or weakened in reality due to the contravention of other non-psychological expectations. Additionally, we can assume that there are numerous instances where an individual is assessed as atypical due to psychological or non-psychological violations, but neither we nor the person who assesses this are aware of it.

7. Prediction of ‘Invisible’ Conditions

Our intuitive psychology comprises a group of presuppositions that allow us to comprehend and anticipate other people’s behavior in the majority of everyday situations. However, it is not a fully comprehensive account of how and why intentional agents behave. Intuitive psychology wholly focuses on conspecifics. The majority of animals’ motivation and conceptions are significantly disparate from our intuitive expectations (for example, see Grandin, 2005 #3976).

It happens that, even among conspecifics, our intuitive psychology frequently cannot help us to interpret behavior—for example, the behavior of young children, whose utterances and arrivals at certain conclusions can be perplexing. This can be explained by the assumption that, if intuitive psychology only accounts for a section of mental function, dysfunction within systems which it contains no presuppositions for will be ‘invisible’. This assumption appears to be correct, especially when the dysfunction pertains to certain features of cognition, excepting reasoning, planning, and decision-making.

The condition of prosopagnosia—the failure to associate the visual stimulus of a person’s face with information held in memory about the person (de Renzi, Faglioni, Grossi, & Nichelli, 1991)—serves as a good example. This handicap only applies to the global visual trace of the face, not to face-details or other aspects of an individual (Farah, Levinson, & Klein, 1995). Consequently, patients can overcome it by heeding facial features, voice, gait, and other characteristics in order to interact
appropriately. It is improbable that this condition could be detected via intuitive psychology, because its only symptom is a prolonged interval before responding to an individual’s presence. This is unlikely to be recognized—if it was, it may be misinterpreted as illustrating some sort of difficulty with vision, memory, or social interaction (i.e. an unwillingness to interact with others). In a similar way, the majority of kinds of visual agnosia—where an individual becomes confused when asked to name and describe common types of objects or animals (Dixon, 2000)—could be missed or misinterpreted.

Specific neuro-psychological conditions are generally expected to activate the sense that a dysfunction of some sort is present—however, it is hard for intuitive psychology to define what, exactly, this dysfunction is. For example, Tourette’s syndrome causes breaches of etiquette that are detectable even in divergent cultures (Staley, Wand, & Shady, 1997), and these breaches are often not attributed to cognitive control, due to our intuitive psychology’s unfamiliarity with the idea of distinct neural procedures and control loops connecting them. Another example is aphasia, which is frequently assumed to be a kind of insanity, due to the lack of meaning that can be derived from their utterances. Because intuitive psychology contains no detailed account of the intricate ways in which thoughts and speech are linked, disruption of speech is often assumed to represent disruption of thought.

8. From Intuitions of Disorder to Folk-Models

The operations that lead to the perception and analysis of mental disorder can be most accurately portrayed by describing causal links between disorder, the resulting behavior, the perception of behaviors controlled by intuitive psychology, and the patterns of acquisition and communication that cause models to be chosen. These links are illustrated in Figure 1 below.

8.1 What Makes Folk-Models “Folk”?

Up to this point, we have mainly concentrated on how intuitive psychology sorts the behaviors that are notable for their breaching of expectations from the others. This leads us to question whether this
system of perception induces general cross-cultural ideas of mental disorder.

In order to answer this question, we must first discuss contemporary anthropological models that illustrate the way cultural knowledge is transferred. How are certain models straightforwardly and customarily transmitted within a group? This sort of question is handled by present-day anthropological theory through cultural selection frameworks (Boyd
& Richerson, 1985; Durham, 1991; Sperber, 1985). A key presupposition is that, similarly to other kinds of human interaction, cultural transmission does not involve ‘downloading’ notions from one mind to another; instead, deductive processes are necessary, in which individuals notice signals in other’s behavior, deduce their communicative purposes, and establish concepts founded on their deductions (Sperber, 1996; Tomasello, Kruger, & Ratner, 1993). Consequently, people are always generating modifications of others’ representations. The unpredictability of communication and deductions leads us to seek an explanation for the presence of shared representations or ‘cultural’ information, where many varying models would be expected (Sperber, 1985). By terming certain representations ‘cultural’, we focus on the similar representations held by participants in a certain group. This similarity is indicative of certain notions and norms being chosen during the procedure of transmission, while others are altered, abandoned, and forgotten.

Cognitive predispositions go some way towards providing an explanation of the repetition of certain notions and norms (Sperber & Hirschfeld, 2004). Research and models originating from experimental and developmental psychology, linguistics, neuro-psychology, and the neurosciences are all unified in the contemporary cognitive anthropology approach, in an attempt to illustrate the power of cognitive predispositions in increasing the probability of specific types of notions and deductions appearing. Certain principles—the majority of which are implicit—accompany and arrange incoming data, which causes certain deductions to follow, regardless of their origin. As a result, we are left with statistical ‘attractors’ in the population dynamics of cultural transmission (Claidière & Sperber, 2007; Sperber & Hirschfeld, 2004).

8.2 A Basis for Dysfunction Intuition

The argument here is that a sizable amount of culturally transmitted folk-understandings of mental illness originates from cognitive dispositions, which impact cultural transmission significantly. This indicates that instincts about mental disorder are based on a cognitive network that is predominantly applicable across cultures, as opposed to the conventional presuppositions of ethno-psychiatry. Perceptions of atypical behavior are frequently called intrinsically ‘cultural’ (Gaines,
1992; Jovanovski, 1995) and, in all likelihood, differ to a large extent as a result. In the word of Anthony Marsella: ‘mental disorders cannot be understood apart from the [culturally specific] concept of self, because it is the nature of the self which serves to identify ‘reality’ for a given cultural group and which dictates the definition of what constitutes a symptom [italics added]’ (1981, p. 362; see also Good, 1994 #3892 and Sadowsky, 2003 for similar arguments).

It is useful to explore this statement in more detail. Here, the word ‘symptom’ could be interpreted in two ways—it could mean ‘behaviors that people believe to be triggered by the mental dysfunction’ or, alternatively, ‘behaviors triggered by the mental dysfunction which are overtly built into a model of mental dysfunction’. Marsella appears to have intended the second meaning—in this sense, the statement seems totally justified. Our ‘cultural models’ of mental dysfunction unquestionably differ according to culture, within certain confines, as we will discuss below. However, we cannot assume that local models govern whether behaviors are or are not perceived as potential proof of mental dysfunction.

An assortment of the behaviors recounted above—including breakdowns in appropriate communication or motor control, incomprehensible emotions and self-destructive behaviors) could activate the instinct that an individual may have a mental disorder, no matter whether that can be related back to or clarified by a local cultural model or not. All European or Western individuals, even those who are not familiar with psychiatry, can interpret the motions of a Tourette’s patient as indicative of dysfunction, though they often cannot diagnose what this dysfunction might specifically be. This is also true in other cultures—a range of other atypical behaviors are recognizable as symptomatic of mental disorder, even without the ability to carry out further analysis of it.

8.3 An Illustration: Haslam’s Model of Folk-Psychiatry

Certain kinds of behavior are highlighted as representative of mental disorder in the majority of human groups—they correlate across cultures. The steps through which mental disorder is brought about are also hypothesized and locally agreed upon. Conventional ethno-psychiatry
details these two stages in comprehending dysfunction (Kleinman, 1988), but may face the topic of culture in an overly ‘culturalist’ manner, believing culture to be an extrinsic network of representations that is considered from a theoretical point of view, separate from actual cognition (Jovanovski, 1995). Therefore, there is very little structured research into the cognitive procedures incorporated within it.

One anomaly is a sequence of conceptual and experiential papers by Haslam and colleagues that propose a psychological description of Western ‘folk-psychiatry’ (Giosan, Glovsky, & Haslam, 2001; Haslam, 2005; Haslam & Giosan, 2002). Their model details four different ways that perceptions of behaviors may fluctuate: [1] pathologizing, or in other words, the degree to which the behavior is interpreted as atypical due to it being difficult to clarify; [2] moralizing, where the behavior is thought to be governed by the person and having a certain moral valence; [3] medicalizing, where the behavior is thought to be a direct consequence of an implicit natural condition; [4] psychologizing, where the behavior is thought to be produced mentally but not intentionally — it is the consequence of a mental dysfunction, and the cornerstone is its origin, not its reasons, with decreased moral judgment (Haslam, 2005). Haslam and colleagues also recorded significant cultural variation in the comparative significance of these measurements. While US participants are more likely to prefer an ‘internal’ perspective of mental dysfunction (particularly ‘psychologized’ internal disputes), Romanian and Brazilian participants highlight external explanations for it (Giosan et al., 2001).

This model gives us a good foundation for exploring the cognitive procedures that are the basis of Western folk-understandings of mental disorder. Additionally, it gives us a guide for carrying out further experiential studies that build on conventional ethno-psychiatry—in other words, those that build on the accounts of the cognitive procedures involved in individuals considering mental disorder. In future research, it is important to appreciate that pan-specific aspects of human minds are probable authorities over cultural models.

8.4 “Looping Effects” from Models to Behaviors

Ian Hacking detailed the intricate network of links between pathology, its cultural context of appearance, its typical manifestations within that
context, its popular categorization, and its scholarly description in a sequence of inquiries into past ‘ways of being mad’ (Hacking, 1995b, 1998). A ‘looping effect’ exists, where certain symptoms that have become core to scientific understanding of a condition guide people towards standard exemplifications of mental dysfunction. An instance of this phenomenon comes from Western psychiatry, when conditions such as female hysteria, long-lasting fugue states, and multiple-personality disorder were recognized in the research and thereafter spread throughout the culture (Hacking, 1995a). This examination of looping effects adds to the wealth of research focusing on historical and cultural procedures within the displays and models of dysfunction (see, for example, Porter, 1987 #7829 and Porter, 2004).

We can assist our comprehension of these feedback loops by looking at feed-forward links between the procedures discussed above. Hacking’s statements about ideas of mental dysfunction actually constitute a broad evaluation of ‘epidemiological’ models of cultural transmission. The reality of a highly diffused representation within a certain group helps us to foresee the ways in which it might be transmitted in the future. For example, there is a ‘frequency bias’, in which it is probable that individuals will acquire and pass on representations that are already popular (Boyd & Richerson, 1985). Instances of disordered behavior overtly noted by others as being dysfunctional have a high probability—all else being equal—of being more salient and more memorable than other atypical behaviors. Just as in other areas of cultural transmission, behaviors that match up with an established pattern are much more likely to be understood and recalled (Bartlett, 1932), where alternative types of atypical or surprising behavior might be brushed off as behavioral ‘noise’. Contemporary cognitive anthropology recounts the looping effect of popular ideas and norms in the area of ‘race’ concepts (Hirschfeld, 1994b), religious and supernatural beliefs (Boyer, 1994), and many more (see e.g. Hirschfeld, 1994 #4583).

9. Conclusion

Our models of behavioral dysfunction originate from culture, in the same way that narratives, scholarship, etiquette, politics, cuisine, musical traditions, and religious rituals do. Mental dispositions that make up a section of our common cognitive architecture govern these cultural
formations (Sperber, 1996). This is the foundation of my argument that intuitive psychology should be considered to be the prime point of derivation of implicit presuppositions about other agents’ behaviors and, as a result, a prime component in making us discern that an individual may have a mental disorder. While intuitive psychology does not describe why a behavior is atypical or the reasons behind its occurrence, it leaves a gap in which we can place a causal process that gives rise to this particular dysfunction. We may or may not fill the gap with a model of mental disorder that others in our cultural group subscribe to. Since some dysfunctions are invisible, and certain types of causal models are inherently more credible than others, intuitive psychology restricts the manner in which individuals form culturally pervasive ideas of mental disorder in two areas.

One objective of this model is to supply the ‘missing link’ between the incidence of certain behaviors (including those ascribable to mental disorder) and pervasive cultural models of mental disorder. The majority of cross-cultural psychiatry is centered around mental disorder without considering why certain forms of dysfunction are more noticeable than others, or why some recognizable atypicality is salient but some is not, or why certain recognizable atypicality is the focus of culturally transmitted models. In contrast, the majority of ethno-psychiatric research presupposes that the cultural models supply us with a notional grid, anything external to which will not be perceived as atypical or indicative of dysfunction. However, this is not correct—there are many instances where the detection of atypical behavior cannot be traced back to a shared model. The most plausible explanation for this is that inklings of mental disorder come from manifest, repetitive, and unaccountable breaches of implicit psychological expectations.

It is as yet unclear whether this proposal can clarify why such a high level of variation in individual and shared interpretations of mental disorder exists. However, it is suggested that a useful approach to further research is to involve intuitive psychology and its well-founded, intricate, early-acquired, implicit principles within our attempts to relate and comprehend the causal links between mental disorder and cultural representations.


6. Detecting Mental Disorder


