Revisiting the Developed Versus Developing Country Distinction in Course and Outcome in Schizophrenia: Results From ISoS, the WHO Collaborative Followup Project

by Kim Hopper and Joseph Wanderling

Abstract

This article examines the long-standing and provocative finding of a differential advantage in course and outcome for persons with schizophrenia living in "developing" countries, using results from the newly completed World Health Organization (WHO) collaborative project, the International Study of Schizophrenia (ISoS). The article addresses two questions: Has the differential survived the 13 years since it was last reported? If so, are the results demonstrably *not* attributable to artifactual confounding? The analysis focuses on the 809 subjects who make up the combined incidence cohort of ISoS. These include members of the original treated incidence cohorts of two earlier WHO studies (the Determinants of Outcome of Severe Mental Disorders and the Reduction of Disability Studies) as well as subjects drawn from two additional samples (Hong Kong and Madras/Chennai). We first review the consistency of the finding of a "developed versus developing" differential in course and outcome and then examine a variety of course and outcome measures for the ISoS incidence cohorts. Evidence of differences in illness trajectory in favor of the developing centers was consistently found. Six potential sources of bias are then examined: differences in followup, arbitrary grouping of centers, diagnostic ambiguities, selective outcome measures, gender, and age. None of these potential confounds explains away the differential in course and outcome. We conclude with suggestions for further research, with particular attention to the need for close documentation of everyday practices in the local moral worlds that "culture" refers to.

Keywords: Schizophrenia, culture, developing versus developed, recovery, WHO.

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Considerable interest and no little skepticism have long been aroused by reports of better outcome for schizophrenia in less industrialized, more "traditional" societies. Methodological hazards aside, the claim appears to fly in the face of clinical reason and experience. Yet the long-term outcome of schizophrenia in societies of relatively comparable "development" status remains stubbornly diverse, a fact documented in studies of varied provenance (e.g., Bleuler 1978; Warner 1985; Harding 1988; Strauss 1994; Davidson and McGlashan 1997). Few seem eager to concede that course of illness may be "hard-wired" by prognostic factors that are essentially fixed by the time of first onset—or at any rate, by the time the sufferer is first treated. Yet the alternative suggestion—that broad cultural factors, to some extent independent of initial illness severity or premorbid functioning, not only influence course but may substantially set differential probabilities of recovery for what seem to be clinically similar entities—still seems a difficult proposition. The well-earned methodological suspicions aside, considerations of therapeutic competence and armamentaria, consistency of treatment and follow-through, the depredations of poverty, and the uncertainties of informal support are the usual shoals on which provisional acceptance of such a proposition founders.

Before potential reasons for the difference bear examining, however, the thing to be explained—that differential rates of recovery persist in defying the usual criticisms advanced for discounting them—should be soundly established. The most recent of the WHO followup studies of schizophrenia offers an opportunity for revisiting this much-contested finding.

Statement of the Problem

In 1967, WHO initiated a set of studies investigating the manifestation, consequences, and course of schizophrenia and related disorders. Since then, nearly 30 research sites in 19 countries have participated. These studies—specifi-

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cally, the International Pilot Study of Schizophrenia (IPSS, 1967) and the Determinants of Outcome of Severe Mental Disorders (DOSMeD, 1978), with initial followup periods ranging from 2 to 5 years—have consistently found persons clinically diagnosed with schizophrenia and related disorders in the industrialized West (chiefly Europe and the United States) to have less favorable outcomes than their counterparts in "developing" countries (countries in Africa, Asia, and Latin America) (WHO 1973; Jablensky et al. 1992). Although the number of distinctive "cultures" was small[1] and there were a few anomalies,[2] the durability of this finding, extensively documented and assessed with increasingly sophisticated instruments, is quite remarkable—arguably the more so for being built on so anthropologically rickety a foundation. By the late 1980s, the documentation that persons diagnosed as suffering from schizophrenia consistently do better in the long run in non-Western settings was being hailed as possibly "the single most important finding of cultural differences in cross-cultural research on mental illness" (Lin and Kleinman 1988, p. 563).

But it was far from clear whether the pronounced differences seen in short-term followups would hold up over time. Questions have been raised as well about the conceptual adequacy of such labels as "developed" and "developing" (Hopper 1991; Edgerton and Cohen 1994), a point implicitly illustrated by the anomalous refusals (cited in footnote 2) of a few centers to group with their assigned class. Diagnostic ambiguities invariably cloud the picture when so many different investigators, some hailing from distinctive psychiatric traditions, are included; the ambiguities are compounded when as much as a quarter-century has elapsed since the initial assessment (Gureje 1996, p. 128). Most relevant here, what accounts for the apparent "benefits" of underdevelopment was not at all apparent (Kleinman 1988). Speculation ranged widely. Cultural signposts certifying the expectation of recovery, self-exempting modes of illness attribution, the therapeutic benefits of accommodating work, kin-based stores of supportive social capital, the relative anonymity of life in the industrialized world—all of these have been proposed as explanatory mechanisms (Cooper and Sartorius 1977; WHO 1979; Warner 1985).

[1] The "developing" world was represented by samples from Ibadan (Nigeria), Cali (Colombia), and Agra (India) in IPSS; by Ibadan, Cali, Agra, and Chandigarh (India) in DOSMeD; and by Chandigarh, Madras (India), Beijing (China), and Hong Kong in ISoS. If one combines the three studies, the category takes in a single Latin American and African example each, two from Asia, and three from the Indian subcontinent.

[2] Early on, for example, it was apparent that the short-term pattern of course for IPSS subjects in Cali "approximated centres in developed countries" (WHO 1979, p. 369n). Conversely, in a recent recursive partitioning analysis of short-term outcome in DOSMeD (Craig et al. 1997), Prague (Czechoslovakia) and Nottingham (United Kingdom) tended to align with the developing centers.

Hence the timeliness of the recently completed ISoS, the latest of the WHO Collaborative Projects. In early 1997, investigators completed data collection in followup interviews of both the original IPSS prevalence cohort (26 years after the episode of inclusion) and the DOSMeD cohort (13–16 years after initial episode), as well as two other groups of subjects—an incidence cohort from each of three centers of the WHO Reduction and Assessment of Psychiatric Disability Study (RAPyD, 1978) and a mixed set of subjects (two treated incidence cohorts, one prevalence) from three additional invited centers (see Hopper et al., in press).

This article has a modest aim: to examine as closely as the available data permit the durability and soundness of that provocative finding of a differential advantage in course and outcome for the developing countries. Has the differential outcome survived the 13 years since last reported for (some of) these same subjects? If so, are the results demonstrably *not* attributable to artifactual confounding?

We focus here on course and outcome for the combined *incidence* cohort of ISoS—that is, for the 809 subjects followed since "first (treated) episode" of psychosis (table 1), only some of whom appeared in earlier WHO analyses of DOSMeD cohorts. We first review the consistency of the finding of a "developed versus developing" differential in course and outcome in three WHO studies. Next, we examine a variety of course and outcome measures for the ISoS incidence cohorts that bear upon differences in illness trajectory for the two groups. We analyze five potential sources of bias and assess their likely impact on these reported differences. We conclude with some directions for further analyses.

Methods

With 13 research centers, spread across 11 countries, and a training, data gathering, and analysis period that spanned nearly a decade, questions of standardization of methods inevitably arise. Detailed descriptions of the ISoS research protocol and instruments, reliability exercises, and analysis of cohort bias are available elsewhere (Sartorius et al. 1996; Drake et al., in press; Siegel et al., in press). Suffice it to note here that differential attrition seems not to have substantially biased the followup cohort, although there was a nonsignificant trend of subjects with poorer prognostic traits (male subjects, those with slow illness onset) being more likely lost to followup.

Entry diagnoses were assigned by local clinicians, most of whom had undergone a training regimen in the use of a common psychopathology assessment tool (the Present State Examination [PSE–9], supplemented in

Table 1. WHO ISoS—treated incidence cohorts

Location	Original *n*	Followup *n*[1]	Lost to followup	Deaths
"Developing" Centers				
Chandigarh (D)[2]—urban	155	80	61	14
Chandigarh (D)—rural	55	38	7	10
Hong Kong (I)	100	70	19	11
Madras (I)	100	77	14	9
Total	410	265 (65%)	101 (25%)	44 (11%)
"Developed" Centers				
Dublin (D)	67	37	22	8
Groningen (R)	83	63	11	9
Honolulu (D)	71	26	41	4
Mannheim (R)	70	56	7	7
Moscow (D)	72	52	10	10
Nagasaki (D)	115	57	51	7
Nottingham (D)	99	86	4	9
Prague (D)	118	79	28	11
Rochester (D)	58	33	25	0
Sofia (R)	60	55	3	2
Total	813	544 (67%)	202 (25%)	67 (8%)

Note.—ISoS = International Study of Schizophrenia; WHO = World Health Organization.

[1] Followup time ranged from 13 to 17 years.

[2] Original study in parentheses. (D): DOSMeD. (R): RAPyD. (I): Invited. Note that of the original developing centers of DOSMeD, Agra, Cali, and Ibadan did not participate in ISoS; neither did Aarhus, a developed center.

most cases by the Psychiatric and Personal History Schedule). The PSE was translated into indigenous languages as needed. For over half of the ISoS sites (those made up of the DOSMeD centers), these entry diagnoses were reviewed by a WHO-convened group of experts. Both before and during the study, investigators were required to demonstrate reliability (within centers and across centers) by rating videotaped clinical interviews of subjects. There is little question that these diagnoses represent local psychiatric "ethnographic reality" as it appeared 15 years ago. The official WHO analyses (Hopper et al., in press) use the nomenclature of the most recent ICD–10 standard, obtained by using an algorithmic conversion from the original ICD–9 diagnoses (WHO 1994).[3] In order to minimize the risk of classification artifact, in the analyses below we present findings by several different diagnostic conventions.

Findings

Consistency of the Developed versus Developing Differential in Course and Outcome. As table 2 illustrates, the finding of a consistent outcome differential favoring the "developing" centers is remarkably robust. It extends across all three WHO collaborative projects. It holds for followup periods ranging from 2, to 5, to 15 years. It applies when various diagnostic groupings are used (for ISoS: ICD–9 schizophrenia, converted ICD–10 schizophrenia, and all psychoses). It holds when country groupings shift (note the changes in table 1 in the makeup of developing and developed groupings from DOSMeD to ISoS). It even appears to be relatively constant, as indicated by the odds ratios for recovery calculated in the far right column of table 2.

Other Course and Outcome Indicators for ISoS. The late course differential in table 2 (percentage showing no psychotic episodes vs. percentage with continuous illness in the most recent 2 years of followup) holds for other outcome indicators as well. As table 3 illustrates, the differential favoring developing centers applies to general clinical state (the Bleuler scale; Bleuler 1978), symptomatology (scores on the Global Assessment of Functioning–Symptoms scale; APA 1987), disability (scores on the Global Assessment of Functioning—Disability scale [APA 1987] and Disability Assessment Schedule [WHO 1988]), and social functioning (at least for paid work or housework). It holds up, too, whether a narrow (ICD–10) or broad ("spectrum") classification of

[3] See Craig et al., in press, for a discussion of diagnostic stability over time in ISoS.

Table 2. WHO outcome studies—a synopsis

Study	Percentages "Best" vs. "Worst" Outcomes[1]		
	Developed[2]	Developing	Odds Ratio[3]
IPSS (1967–)			
2-yr followup	35 vs. 33	52 vs. 19	2.01
5-yr followup	23 vs. 24	38 vs. 14	2.05
DOSMeD (1976–)			
All subjects	33 vs. 17	49 vs. 11	1.95
ICD–9 SZ	32 vs. 19	49 vs. 13	2.04
ISoS 15-yr followup (incidence only), % never psychotic in last 2 yrs vs. continuously psychotic			
ICD–9 SZ	40 vs. 33	58 vs. 23	2.07
ICD–10 SZ	37 vs. 38	53 vs. 27	1.92
All psychoses	45 vs. 30	58 vs. 22	1.69

Note.—DOSMed = Determinants of Outcome of Severe Mental Disorders study; IPSS = International Pilot Study of Schizophrenia; ISoS = International Study of Schizophrenia; SZ = schizophrenia; WHO = World Health Organization.

[1] Various measures of patterns of course were used in the individual studies.

[2] Assignment of centers to categories of developed vs. developing is as per individual studies.

[3] These are the odds of good outcome in developing centers vs. the odds of good outcome in developed centers.

Table 3. ISoS results—"developed" vs. "developing" centers

Outcome measures	Diagnostic Grouping					
	ICD–10 SZ		SZ + SA, SZ-like[1]		All psychoses	
	Developed *n* = 319	Developing *n* = 183	Developed *n* = 410	Developing *n* = 230	Developed *n* = 516	Developing *n* = 260
Bleuler scale						
% recovered	44	55	49	60	55	59
% severe	12	9	10	7	9	7
GAF–S						
% > 60	43	70	48	73	53	73
GAF–D						
% > 60	41	65	44	69	47	69
Global DAS						
% excellent or good	24	53	28	57	32	58
Last 2-yr course						
% never psychotic	37	53	40	58	45	58
% continuously psychotic	38	27	33	23	30	22
Working[2] most of last 2 yrs (%)	46	73	49	77	51	79

Note.—DAS = Disability Assessment Schedule; GAF–S = Global Assessment of Functioning–Symptoms; GAF–D = Global Assessment of Functioning–Disability and Disability Assessment; ISoS = International Study on Schizophrenia; SA = schizoaffective; SZ = schizophrenia; SZ-like = acute schizophrenialike psychoses.

[1] This approximates the ICD–9 schizophrenia category.

[2] This indicates paid job or housework.

schizophrenia is used, or if the diagnostic net is expanded to take in all psychoses. Table 4 (A and B) shows that the odds ratios in favor of the developing centers range from 1.57 to 3.51 for ICD–10 diagnosis of schizophrenia, and from 1.59 to 3.61 for the broad spectrum diagnosis (schizophrenia, schizoaffective disorder, and acute schizophrenia-like psychoses) when Hong Kong is included as a developing center. The same table shows how the odds ratios shift somewhat when Hong Kong is classified as a developed center but still consistently favor the developing group.

Table 4. Odds ratios and various outcome measures, "developed" vs. "developing"

A. ICD–10 schizophrenia

Outcome measure	Developed $n = 319$ ($n = 388$)[1]	Developing $n = 183$ ($n = 114$)[1]	Odds Ratio[2] (Confidence Interval) Hong Kong as "developing"	Hong Kong as "developed"
Bleuler scale, % recovered	44 (46)	55 (56)	1.57 (1.09–2.27)	1.52 (1.00–2.32)
GAF–S, % > 60	43 (49)	70 (69)	3.15 (2.12–4.70)	2.32 (1.48–3.65)
GAF–D, % > 60	41 (46)	65 (66)	2.64 (1.79–3.90)	2.25 (1.45–3.51)
Global DAS, % excellent or good	24 (28)	53 (49)	3.51 (2.27–5.41)	2.47 (1.57–3.89)
Last 2-yr course, % never psychotic	37 (38)	53 (59)	1.97 (1.36–2.86)	2.33 (1.52–3.57)
Working most of last 2 yrs, %	46 (49)	73 (82)	3.13 (2.09–4.70)	4.71 (2.78–8.00)

Note.—DAS = Disability Assessment Schedule; GAF–S = Global Assessment of Functioning–Symptoms; GAF–D = Global Assessment of Functioning–Disability.

[1] Data in parentheses include Hong Kong in the "developed" group.

[2] These are the odds of good outcome in developing centers vs. the odds of good outcome in developed centers.

B. Schizophrenia spectrum[1]

Outcome measure	Developed $n = 410$ ($n = 480$)[2]	Developing $n = 230$ ($n = 160$)[2]	Odds Ratio[3] (Confidence Interval) Hong Kong as "developing"	Hong Kong as "developed"
Bleuler scale, % recovered	49 (49)	60 (63)	1.59 (1.15–2.21)	1.77 (1.23–2.56)
GAF–S, % > 60	48 (52)	73 (74)	3.05 (2.13–4.38)	2.71 (1.81–4.05)
GAF–D, % > 60	44 (47)	69 (71)	2.74 (1.93–3.89)	2.73 (1.84–4.04)
Global DAS, % excellent or good	28 (31)	57 (56)	3.48 (2.38–5.08)	2.87 (1.94–4.26)
Last 2-yr course, % never psychotic	40 (40)	58 (64)	2.07 (1.49–2.88)	2.62 (1.80–3.79)
Working most of last 2 yrs, %	49 (50)	77 (85)	3.61 (2.48–5.25)	5.70 (3.52–9.23)

Note.—DAS = Disability Assessment Schedule; GAF–S = Global Assessment of Functioning–Symptoms; GAF–D = Global Assessment of Functioning–Disability.

[1] This is ICD–10 schizophrenia, plus schizoaffective disorder and acute schizophrenialike psychoses.

[2] Data in parentheses include Hong Kong in the "developed" group.

[3] These are the odds of good outcome in developing centers vs. the odds of good outcome in developed centers.

Potential Sources of Bias. Such findings could be artifactual if it were the case that underlying, nonrandom differences between the two groups were operating in a way that favored a finding of relative benefit in the developing group. Several candidates are plausible.

Ascertainment. Even if the original groups were comparable diagnostically, if systematic differences crept in during the followup endeavor, this could skew the picture of comparative outcome. As table 1 shows, however, lost-to-followup rates are comparable for the two groups (25%), and differences owing to mortality are small (11% vs. 8%). But suppose the difference entered in *who* was lost to followup: if it were the case, for example, that "developed" center subjects who *recovered* were more mobile, less easily located through clinical records, and less likely to be interested in participating once relocated (all of which was suggested, anecdotally, in reports from the Rochester, NY, field team), then the "analyzable" group would be artificially weighted in the direction of poorer outcome (having "lost" more of those who were better off). This turns out not to be the case. For both narrow and broad diagnostic classifications, the chances of

showing up in the long-term followup are *better* for those subjects in the developed world with a favorable *early* (2 years) course of illness (table 5).[4]

Arbitrary groupings. The developed versus developing grouping has been rightly criticized as more bureaucratic convenience than analytic distinction. If anything, the passage of 15 years has compounded the difficulties, especially with respect to Hong Kong.[5] With Hong Kong assigned to the developing group, the effect should be to subvert the detection of difference; in fact, when it is shifted to the developed group, the odds ratios tend to shrink with respect to symptoms and widen somewhat with respect to functioning. That the finding holds up across time, study design, composition of groups, and measures of outcome suggests that, however anthropologically incoherent the classification may be, it is marking something real. Whether that something is best "explained" by the crude taxonomy used to capture it is another question.

Diagnostic ambiguities. In anthropological circles, it is commonly argued that the term "schizophrenia" is part of a powerful discursive practice that not only authoritatively names but also materially shapes the objects of its attention. But this does not radically distinguish it from other "disease entities" in the psychiatric (or biomedical) taxonomy (Baruch and Teacher 1978; Sedgwick 1982; Good 1994). Like race, another "dynamic [if disputed] cultural category" (Barrett 1996, p. 305), schizophrenia has long served as a marker of disorder and dysfunction. Until a more disaggregated, phenomenologically based set of categories proves its worth,[6] even culturally disputed terms are useful as signifiers of difference. The detection of consistent patterns across time and place suggests that durable differences are at stake, no matter how problematic the surface markers.

A more pointed challenge is posed, however, by the hypothetical notion of "non-affective acute remitting psychosis" (NARP, Susser and Wanderling 1994; cf. Stevens 1987; Desjarlais et al. 1995): a psychotic disorder misdiagnosed as schizophrenia with a markedly better prognosis that may explain the "developing" advantage. (Note that because course is part of the definition of NARP, that advantage is built into the diagnosis.) To test this, we calculated recovery rates within NARP and non-NARP groups (the relevant results are displayed in table 6). Briefly, while NARP turns out to be more common among cases diagnosed as schizophrenia in the developing world, that "selection" advantage is countered by an interaction effect: the difference NARP makes in enhancing the chances of recovery is more profound in the developed world. The two effects operate in opposing directions. The same table also highlights the contrary contextual (or interaction) effect in centers "corrected" for the unwarranted boost to recovery given by NARP: recovery rates for non-NARP subjects in the developing centers are 52 percent, as compared with 38 percent in the developed world. Similar results, 55 percent versus 42 percent, are obtained for the broad spectrum schizophrenia diagnosis as well.[7]

Selective outcome measures. It could further be the case that the measures of outcome systematically privilege contextual features of recovery that have little to do with actual social function. Hospitalization, for example, is more of an "administrative outcome" reflecting policy and resource availability than an elastic indicator of need met (Harrison et al. 1994). We have avoided most of these institutional effects in the outcome indicators shown here. Then too, the rather generous range of capacities tapped (from symptom control to interference with function) and the consistency of the differential across them argue otherwise. Still, problems remain. Where welfare states offer reasonable stipends (in the form of disability payments) to persons certified as "disabled," the spur of necessity is blunted and motivation to work may suffer. It might be argued, however, that certain features of local necessity may well be central to

[4] A brief word on selection bias may be in order here. Murphy (1982) has argued that irregularities in sampling in IPSS meant that more patients with longer histories of schizophrenia (even with the 5-year limit on onset) were included in the developed centers. (What his analysis actually shows is that acute onset is more common among the developing centers and prior psychiatric contact less common.) Given huge differences in local resources for treatment and custodial care—easily accessible clinics and state-supported institutions chiefly—the *converse* bias seems equally plausible. At the time of the IPSS, for example, Agra had one psychiatric facility of 718 beds for a catchment area of 17 million people (WHO 1973, pp. 54–55). To the extent that ease of access affects the threshold at which families, significant others, or the police resort to psychiatric facilities, there should be profound differences in the mix of cases brought to clinical attention. Where thresholds of accessibility are high (owing to transportation difficulties, costs, suspicion of unfamiliar clinics, etc.) and local alternatives exist, "therapy-managing groups" (Janzen 1978) may decide it makes practical sense to triage informally all but the most recalcitrant cases.

[5] Hong Kong hardly fits the mold of a developing country today—and did not even at the time of the baseline interviews, a fact suggested emphatically by the *availability* of detailed demographic data for Hong Kong (but not for the developing centers of ISoS) in the 1980 United Nations *Demographic Yearbook*. We include it here to make the comparison of developing and developed the most conservative. An alternative would be to exclude it from the analysis altogether—as was done with Taipei in the original IPSS analysis, because of the per capita physician rate, availability of medical facilities, and leading causes of death (WHO 1979, p. 148n).

[6] Say, for example, people begin using a symptom- or syndrome-based classification system that takes explicit account of the clinical picture of the 80 percent of the world's population that is not part of North America or Europe, continents that have supplied the cases on which the current knowledge base of psychiatry is built (Kleinman and Cohen 1997).

[7] Subtracting NARP-mediated recoveries and recomputing the rates among developed and developing centers has little effect on the relative odds of recovery; for Bleuler ratings of recovery, for example, the odds ratio rises slightly from 1.3 to 1.4.

Table 5. Ascertainment bias? Odds ratio of appearing in the long-term followup

	Developing Centers		Developed Centers	
	Remitting course	Unremitting course	Remitting course	Unremitting course
ICD–10 SZ				
Percent found	84	86	87	81
Percent lost	16	14	13	19
Odds ratio[1]	0.85		1.56	
SZ spectrum[2]				
Percent found	84	84	83	80
Percent lost	16	16	17	20
Odds ratio[1]	1.00		1.22	

Note.—SZ = schizophrenia.

[1] These are the odds of inclusion in study given remitting course vs. the odds of inclusion given unremitting course.

[2] This is ICD–10 schizophrenia, plus schizoaffective disorder and acute schizophrenialike psychoses.

Table 6. The effect of NARP

	% Recovered		"Effect" (recovery ratio: NARP/non-NARP)
Center grouping	NARP	Non-NARP	
ICD–10 SZ; onset < 1 week[1]			
Developed	79	38	2.1
Developing	71	52	1.4
SZ spectrum; onset < 1 week[2]			
Developed	83	42	2.0
Developing	75	55	1.4

Note.—NARP = non-affective remitting psychosis; SZ = schizophrenia.

[1] The percent NARP in developed centers is 9.8; in developing centers, it is 15.5.

[2] This is ICD–10 schizophrenia, plus schizoaffective disorder and acute schizophrenialike psychoses; the percent NARP in developed centers is 12.5; in developing centers, it is 27.2.

the beneficial effect observed rather than just an artifact of it (Warner 1985; Wikan 1996). Specifically, where nonmarket work roles allow for great variation in the tasks and competencies socially valued, lingering disability may be less of a barrier to useful employment. Conversely, useful work may slow or arrest the evolution of disability. Far from being mere incidental cultural music, tightly strapped circumstances and flexible means of addressing them may provide therapeutic benefits forgone under circumstances of enforced supported dependency.[8]

Gender and age. Because a number of long-term followup studies (though not all) have found female gender to predict better outcome, we examined gender differences in the assessed cohort, in recovery rates and in subjects lost to followup in developed and developing groups. None showed evidence of a gender bias. Similarly, NARP's effect on recovery is nearly the same for men and women, in both developed and developing groups.[9]

With respect to age, in both developed and developing countries, older subjects (41+ at the time of followup) had better prospects of recovery. The developing centers'

[8] In the treated incidence group, the percentage of ICD–10 schizophrenia subjects working for most of the past two years in the developing centers was 73 percent, vs. 46 percent for the developed centers; for broad spectrum schizophrenia, the figures were 77 percent versus 49 percent, respectively. Intriguingly, when looking only at subjects who were rated as having substantial symptoms, significant disability, or both, the developed centers actually reported slightly more (ICD–10 schizophrenia) subjects working (21.3% vs. 15.4%) or doing housework (39.5% vs. 34.6%) (see Hopper et al., in press).

[9] In the developing world, however, non-NARP women are slightly more likely to recover. Since NARP is more common among men in the developing (15.1%) than in the developed world (6.6%), we adjusted to equalize the two rates. This produced only an additional five cases of recovery in the developed world.

subjects were disproportionately younger, however. If anything, then, the age distributions should give the developed centers an advantage.

This brief digression into the potential effect of NARP suggested another line of inquiry as well. Suppose one were to divide the putative effect of context into an early and later stage. The early stage would focus on initial course—specifically, remitting versus nonremitting or continuous illness. The later stage would focus on the relative prospects of recovery in both those initial course groupings. Table 7 shows this two-stage effect and the net impact it has on the odds ratios of recovery for developing and developed centers. In the first two years of illness trajectory, the effect of context is registered primarily as more favorable initial course; nearly half of the subjects in the developing centers have remitting illness course, as compared with less than a third in the developed centers. Over the next 13 years, subjects with early remitting course in both groups do quite well—with about two-thirds showing recovery in the long run. But a delayed secondary advantage is seen in the developing centers with respect to subjects whose early course was unfavorable: 42 percent of them (compared with 33 percent in the developed centers) go on to recover. If ISoS may be said to yield any evidence for the "slow, uphill returns to health" that Harding and colleagues (1992, p.34) have urged us to look for, it may be found here: in the 22 percent of subjects in the developing centers, and the 23 percent of their counterparts in the developed world, who go on to recover despite the poor prognosis suggested by an unremitting early course of illness.

A final observation on diagnostic bias may be in order. It is sometimes argued that "acute brief psychoses" followed by full recovery are incompatible with a bona fide schizophrenia diagnosis and may unfairly handicap the picture of illness course in the developing world (e.g., Stevens 1987). Table 8 shows the effect on recovery rates if all subjects with single episode psychoses are excluded from the analysis of the broad spectrum schizophrenia group. Rates drop substantially in both the developing and developed groups, to 49 percent and 40 percent, respectively, but still preserve the differential.

Discussion

That the developed versus developing differential has proven so robust is generally taken as prima facie evidence for the relevance of "culture" in influencing course

Table 7. A two-stage effect (ICD–10 schizophrenia)

Early course (0–2 yrs)	Difference (developing vs. developed)	Odds ratio[1]	Recovered at 15 yrs (developing vs. developed)	Odds ratio[1]
Good	47% vs. 31%	1.97	70% vs. 65%	1.26
Poor	53% vs. 69%	N.A.	42% vs. 33%	1.48

Delayed improvement: **poor early course × late recovery:**

Developing	**22%**
Developed	**23%**

[1] These are the odds of good outcome in developing centers vs. the odds of good outcome in developed centers.

Table 8. The effect of single-episode psychosis on recovery rates[1]

	Recovery Rate	
	Developing centers	**Developed centers**
Early remitting patients with single-episode psychosis, % (*n*))	78 (96/123)	59 (80/136)
Other recovering patients (early remitting patients with single-episode psychosis removed from analysis[2]), % (*n*)	49 (63/129)	40 (118/296)

[1] This is for schizophrenia spectrum (ICD–10 schizophrenia, plus schizoaffective disorder and acute schizophrenialike psychoses) patients.

[2] Recovery rates (good outcome at 15 years) for patients with single-episode psychoses are 75% in developing centers, 78% in developed.

and outcome in schizophrenia (e.g., Jablensky et al. 1994; Davidson and McGlashan 1997; Malla et al. 1999). But if the WHO followup studies have shown anything, it is how difficult it will be to tease out the specific patterns and timing of cultural influence using conventional instruments of psychiatric epidemiology (Hopper, in press). At the same time, the durability of this old puzzle suggests that further anthropological exploration is well warranted. Close, on-the-ground documentation (of the sort necessarily forgone in large-scale epidemiological studies) of the local contingencies of illness trajectories (clinical and otherwise) is badly needed. In that regard, the staid anthropological staples long hypothesized as likely factors promoting recovery—supportive kin, auspicious or alternative beliefs, flexibly configured work, forgiving domestic space, more socially integrated subjectivities (Warner 1985; Hopper 1991)—are both relevant and in need of refinement.

At least for the ISoS cohorts, cultural integrity is no longer quite the phantom promise it once seemed. The notion that "developing" might serve as a crude surrogate for "traditional" has long irritated critics of the WHO studies, and for good reason. But if one subtracts Hong Kong from the developing group in ISoS, the remaining members of the "developing" group are all Indian—Madras/Chennai, and the two Chandigarh centers. While this surely restricts the generalizability of the finding of differential advantage, it also simplifies the cultural question considerably. One might legitimately inquire into salient cultural aspects of the Indian subcontinent in ways that would be foreclosed were members of the group spread all over the globe. Indeed, the extraordinary engagement of Indian families in the course of treatment—from the initial decision to seek help, to attending to basic needs and medication adherence during hospitalization, to support afterward, including monitoring medications and functioning—is surely one of the signature features of psychiatry in that country (Nunley 1998). Styles of family interaction over issues of illness, for which preliminary work in Chandigarh was done as a substudy of DOSMeD (Wig et al. 1987*a*, 1987*b*), are thus an obvious candidate for close longitudinal research. As the measurement problems posed by "expressed emotion" in those studies illustrate,[10] useful constructs will have to be embedded in everyday practice and observed over time if their meaning as "variables" is to be interpretable.

[10] Methodological difficulties include the validity of assessing "emotion" from verbal material only (Kleinman 1988), and scaling problems that arise from so ratcheting up the local threshold for rating "overinvolvement" in this most familially engaged culture that virtually no Indian household qualifies as "high" (Nunley 1998).

The same is true of other fields of inquiry not ordinarily seen as part of the "cultural" portfolio. Two in particular are worth noting. First, duration of untreated psychosis could not be reliably measured in ISoS but shows promise (at least in the West) as a predictor of poor outcome (Loebel et al. 1992; Davidson and McGlashan 1997). But since part of the influence of duration of untreated psychosis may be due to its degrading effect on functioning in the *pre*morbid phase, this too may be subject to cultural coloring. If onset is slow and uneven, a setting flexible enough to accommodate fluctuating levels of capacity, motivation, and attentiveness might continue to sustain, even cultivate, the not-yet-impaired aspects of self longer than those that practice early and enduring assignment to the sick role. Were this the case, the clinical price paid for late formal treatment would be muted. Second, anthropologists are increasingly prone to emphasize the particularities of the "local" and the interconnected nature of the "contextual" in studies of culture. Sustained documentary efforts of the sort undertaken in traditional ethnography commonly reveal beliefs and practices to be highly variable, often internally inconsistent, situation dependent, and riven by class, gender, ethnic, religious, and other structural divisions (Ortner 1995). This suggests that culture is pointedly *not* the sort of thing to be assessed by structured questionnaires inquiring bluntly, say, into habits of illness attribution. Not that indirect evidence of the importance of local area is lacking: despite stubborn measurement hurdles, "neighborhood effects" seem well documented for a variety of individual outcomes in the United States (Ellen and Turner 1997), although little attention has been devoted to the status of resident disabled members. Even if we assume its relevance, the workings of solidarity in ethnically diverse, politically charged neighborhoods are bound to be complex, changeable, and difficult to trace (e.g., Sanjek 1999). Still, it seems prudent to seek out distinctive ways in which the workings of solidarity shape the "life worlds" of persons with schizophrenia (Corin 1988).

The ISoS findings offer other lessons as well.

Culture and the Dilemma of Context. An instructive suggestion may be drawn from the interaction effect of NARP and center seen here, one further highlighted by the two-stage model of effect proposed. That is, while it may be folly to attempt to deconstruct culture into a bundle of discrete, measurable variables, it may make sense nonetheless to think that distinctive types of influence may be at work, that these may well be keyed to phases or contingencies of recovery, and that the relevant cultural factors (or better, complexes) may well differ from place to place. With respect to the early phase, for example, in addition to prognostic differences of subtypes of the dis-

order, host resiliency factors, and competent clinical attention, there may be something about the overall response to breakdown (its reception and the cultivation of residual capacity) that increases the likelihood of it being short-lived. Over the longer term, should the disorder prove persisting, other cultural factors—say, at the microlevels of household, neighborhood, work, and everyday social interaction—may be engaged that, over time, more effectively coax "a functional sense of self" (Davidson and Strauss 1992, p. 131) out of the dislocations and suffering occasioned by the disorder. In short, we may well end up investigating not only native "idioms of distress" (Nichter 1981), but also—to some extent at least—native idioms of recovery and the enabling practices that make them vital and effective.

Rehabilitation. The "work of recovery" can be uneven and prolonged. Clinical appreciation for the reconstitutive function of prolonged troughs in the recovery trajectory (e.g., Strauss et al.'s [1985] notion of "woodshedding") has been hard won but, along with anthropological observations on the value of "positive withdrawal" and negotiated terms of social interaction (Corin 1988), has usefully enhanced our understanding of the many fronts and varying paces at which the work of recovery proceeds (Davidson and Strauss 1995). This suggests a more nuanced, developmentally flexible model of rehabilitation—one that, again, directs our attention back to a closer analysis of the microcontexts of support in the lives of those patients with poor early illness course who go on to recover. (Whether formal contexts of care could be designed to mimic such homespun dynamics is another question.)

Narrative Evidence. A similar observation might be made with respect to those intriguing accounts of how mental illness unfolds, and interacts with aspects of a non-ill self, over time in ordinary lives (e.g., Strauss 1989; Estroff et al. 1991). Such accounts, which bring the "I" as agent back into prominence on the cultural stage, are especially revealing with respect to what people do to help themselves restore the sense of efficacy eclipsed by recurring psychosis (Strauss 1994). Given their provenance, the ISoS illness narratives (now in construction) are likely to be heavily clinically inflected. Even so, our examination of initial drafts yielded tantalizing glimpses of circumstances (e.g., direct and lasting responsibility for child care; late-breaking moves for independence from parents) that appear to boost resolve to weather the strains of episodic disorder but are not typically found in the usual roster of recovery-related factors.

No matter the fresh complexities to be pursued, an unmistakable message of optimism may be read across the board in the ISoS findings. For a substantial portion of subjects followed, the guarded hope first voiced by the 17th-century Cervantes—that Sancho Panza's hero remained, perplexingly, "mad in patches, full of lucid intervals" (as cited in Kerr and Snaith 1986)—seems warranted. The trick may lie in how the intervals out from under unreason's rule might be lengthened.

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