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Social Factors and Recovery from Anxiety and Depressive Disorders
A Test of Specificity

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Analysis of 33 instances of recovery or improvement among 92 women with anxiety, and 49 instances of recovery and improvement among 67 episodes of depression, showed that recovery and improvement, when compared with conditions not changing, were associated with a prior positive event. Such events were characterised by one or more of three dimensions: the 'anchoring' dimension involved increased security; 'fresh-start', increased hope arising from a lessening of a difficulty or deprivation; and 'relief', the amelioration of a difficulty not involving any sense of a fresh start. Events characterised by anchoring were more often associated with recovery or improvement in anxiety, and those characterised as fresh-start were associated with recovery or improvement in depression. Recovery or improvement in both disorders was more likely to be associated with both anchoring and fresh-start events. The study involved the reworking of some social and clinical material, and although done blind should be seen as exploratory.

An earlier paper, based on a survey of 404 largely working-class women living in Islington, north London, considered the role of social factors in recovery and improvement in depressive disorders (Brown *et al*, 1988). A 'fresh-start' event often preceded improvement or recovery among those with an episode which had lasted four months or more. The life-changes involved, although at times threatening, all promised some hope of a better future. There was evidence that incipient changes in clinical condition had not led women to make changes to their environment.

The present paper deals in a similar way with anxiety disorders, about which detailed clinical material had also been collected. Less is known about their course or the frequency of recovery or improvement. Still less is known about the role of social factors in onset, course, and recovery. However, progress has been made. Wittchen (1990) reported that some consistent findings have emerged from clinical studies. Most phobic disorders appear to start fairly early in a patient's life – often before 18 years – and they tend to persist (Reich, 1986; Marks & Herst, 1970). There is less agreement about non-phobic anxiety states. The long-term course seems to be more fluctuating and often punctuated by partial remissions and frequent severe relapses of varying duration (Reich, 1986).

Wittchen *et al* (1985) studied all DSM–III anxiety disorders in a large general population sample over a seven-year follow-up using the Diagnostic Interview Schedule, and confirmed that chronic symptoms were the most frequent pattern of illness. There was also a high risk of developing major depression or dysthymia at some point after first onset. Simple phobias in particular took a chronic course. For panic disorder there was a later age of onset and a particularly poor outcome, with the development of depression or some other condition in most instances. The typical outcome for agoraphobia was also chronic, but it was associated with much more severe impairment than other phobias. Results for generalised anxiety disorder (GAD) were less clear, although it appeared to have characteristics of panic disorder and agoraphobia rather than simple phobia. By contrast, the course of depression with concurrent anxiety disorder was predominantly episodic, with full remissions. The findings appear to be broadly consistent with clinical inquiries and those beginning to emerge from the Epidemiologic Catchment Area (ECA) studies (e.g. Robins & Regier, 1991).

There has also been some progress in the study of social factors in depression and anxiety. A number of studies have suggested that negative life events often precede the onset of panic disorder and agoraphobia. Unfortunately most are replete with the methodological shortcomings so often found in life-event inquiries (see Barlow, 1988, pp. 215–219). Nonetheless there has been a good deal of consistency in the reports and the conclusion is supported by more systematic inquiries in Italy (Faravelli, 1985), and London (Finlay-Jones & Brown, 1981).

The London inquiry, using the Life Events and Difficulties Schedule (LEDS), in addition suggested that a specific type of life event was important. Almost two-thirds of women with an anxiety disorder had a severely threatening event in the three months before onset, compared with 18% in women without

psychiatric disorder drawn from the same population. Moreover, while events preceding onset of depression typically involved 'loss', those preceding anxiety involved 'danger'. Those women suffering the joint onset of anxiety and depression tended to have experienced both 'loss' and 'danger' (Finlay-Jones & Brown, 1981; Finlay-Jones, 1989). Miller & Ingham (1985), using a different approach, have found evidence for a similar effect. In a paper dealing with the women in Islington, the importance of 'danger' events for anxiety and 'loss' for depression has been confirmed (Brown, 1992).

We are aware of only one study that did not report a role for danger versus loss, and this provided an inadequate test (Eaton & Ritter, 1988). On the one hand it failed to examine comorbid conditions separately, and so it is impossible to see how many of the considerable proportion with anxiety after experiencing loss also developed depression. On the other hand some of the examples of events considered to be dangerous, such as the introduction of a new member to the social network, do not resemble the category used in the earlier, LEDS-based research.

There has been no research on the role of events in recovery from anxiety. Change in depression essentially follows 'fresh-start' events, conveying renewed hope about the future. These events may be seen as the mirror-image of the loss and disappointment so often involved in onset. Given that it is danger events that tend to precede the onset of anxiety, it was predicted that the relevant positive events would relate to security (rather than hope). Data on depression are therefore also presented in this paper: firstly, to test the proposition that events preceding recovery or improvement in anxiety specifically involve increased security, and those preceding change in depression increased hope; secondly, to test whether recovery or improvement in both conditions in the same woman involves both increased hope and security.

Method

Four hundred and four largely working-class women with a child living at home participated in the first stage of the study (Brown *et al*, 1985, 1986). At this first contact, the woman's psychiatric state and personal circumstances in the year before interview were asked about in detail. A total of 353 women agreed to be reinterviewed a year later. A second follow-up interview was carried out still a year later on 286 women. For these women there was therefore clinical material for three years – the year before the first interview, the first follow-up year, and the second follow-up year.

All measures were based on tape-recorded semistructured interviews carried out in the respondent's home. It was the investigator rather than the respondent who made final ratings (Brown, 1974, 1992; results concerning onset and course of depression are found in Brown & Harris, 1989; Brown *et al*, 1990*a*,*b*,*c*,*d*).

Measurement of psychiatric symptoms

A shortened version of the Present State Examination (PSE; Wing *et al*, 1974) was used. In earlier studies it had been extended to cover the 12 months before interview (Brown & Harris, 1978; Finlay-Jones *et al*, 1980). The interviewer uses the questions on the PSE to date onset and remission, as well as severity of symptoms, during a defined period in order to identify episodes of depression or anxiety, and a description of the course of the disorder over the previous 12 months is obtained (Brown & Harris, 1978).

Our use of the PSE in general-population surveys has for many years been geared to distinguish depressive from anxiety conditions, and to make more than one diagnosis if necessary (Finlay-Jones *et al*, 1980; Finlay-Jones & Brown, 1981; Prudo *et al*, 1981; see also Brown & Harris, 1992). The fact that the PSE clearly differentiates tension and anxiety symptoms is helpful here.

The diagnostic system has been described elsewhere and has been shown to have good inter-rater reliability when used by lay interviewers (Wing *et al*, 1974; Cooper *et al*, 1977). There is also evidence for its construct validity in the context of aetiological research (Brown & Harris, 1978; Finlay-Jones *et al*, 1980; Finlay-Jones & Brown, 1981; Brown & Prudo, 1981; Prudo *et al*, 1981). The Bedford College 'caseness' threshold aims to reflect current psychiatric practice. It is deliberately designed to contrast 'cases', comparable to those of women seen in out-patient clinics, with 'borderline cases', with symptoms that are not sufficiently typical, frequent, or intense to be rated as cases (Finlay-Jones *et al*, 1980).

The following check-list of symptoms has been shown statistically to underlie the clinical criteria for a case of depression.

(a) depressed mood, and
(b) four or more of the following ten symptoms: hopelessness, suicidal ideas or actions, weight loss, early waking, delayed sleep, poor concentration, neglect due to brooding, loss of interest, self-deprecation and anergia.

In practice, many other PSE symptoms are also found. Borderline cases of depression require between one and three of the ten symptoms. In a population study in Edinburgh (Dean *et al*, 1983) this threshold for 'caseness' has been found to be somewhat higher than that of the Research Diagnostic Criteria (Spitzer *et al*, 1978) and the Index of Definition of the PSE (Wing & Sturt, 1978).

'Recovery' was defined as a change from a 'case' to not even meeting criteria for a 'borderline' case and 'improvement' as a move from case to borderline case (but excluding a few rated 'high borderline'). Changes in any other diagnostic conditions such as anxiety or alcoholism were ignored. Onset, recovery, and improvement from 'cases' of disorder were dated as accurately as possible, referring to times such as Christmas, Easter, or move of

house (see Brown *et al*, 1988). The actual dating of point of recovery or improvement was not always easy, since this was often over some weeks, if not months. Therefore, if necessary, the earliest and latest possible dates were established. For the purpose of this analysis the earlier has been taken as the point of change.

The same general approach was used to deal with anxiety disorders (see Finlay-Jones *et al*, 1980), but since the DSM-III system is used in this paper details of the Bedford College system are not given. A decision was made to convert the initial case and borderline case classification of anxiety into the DSM-III-R system (American Psychiatric Association, 1987) because we had been dissatisfied with the lower threshold for clinically relevant anxiety. We had excluded 'low borderline' conditions in previous analysis, but were not always sure about the inclusion of 'medium borderline' conditions. The descriptive clinical material was detailed enough to make such a conversion possible, and if there was any doubt it was always possible to consult the original tape-recorded interviews. Two raters worked separately and had no knowledge of the social material. All differences in ratings were settled by discussion. Details of the conversion are described by Brown & Harris (1992), who also show that the population rates in Islington are fairly close to those obtained from the Epidemiologic Catchment Area (ECA) survey (Robins & Regier, 1991) carried out in five sites in the US, using an instrument designed to reflect DSM-III criteria.

The proportion with panic disorder was 3.3%, with a phobic condition 15.4%, and with GAD 8.2%. The conversion to DSM-III-R criteria resulted in 23% of the original Bedford College 'medium borderline' anxiety conditions and 76% of the 'low borderline' conditions being excluded (see Table 1 in Brown & Harris, 1992); all the original 'case' and 'high borderline' anxiety conditions were included.

The DSM-III-R diagnostic categories have been dealt with as a hierarchy of putative severity as follows: (a) panic disorder or agoraphobia, (b) GAD, (c) social phobia, (d) mild agoraphobia, and (e) simple phobia. Severe or moderate agoraphobia has been distinguished from mild agoraphobia, the latter involving "some avoidance (or endurance with distress), but relatively normal life-style, e.g. travels unaccompanied when necessary, such as to work or to shop; otherwise avoids travelling alone" (American Psychiatric Association, 1987, p. 239).

'Recovery' was defined as a move from a DSM-III-R to a non-DSM-III-R anxiety condition or none at all, and 'improvement' as a move down the hierarchy of conditions - for example panic disorder to a GAD. In practice, first of all the original case/borderline case system was used with recovery consisting of a move to a non-rating, and improvement from case to medium borderline. Then each DSM-III-R diagnosis was considered in the light of this and the descriptive material. Only two changes to the Bedford College ratings of recovery/improvement were considered necessary. It should be borne in mind that those recovering in these terms could still have symptoms of anxiety not meeting DSM-III-R criteria (see Brown & Harris, 1992).

Measurement of life events and difficulties

Although the present paper concentrates on new measures of 'positive' aspects of events, they are an integral part of the existing LEDS, based on a semistructured interview (Brown, 1974; Brown & Harris, 1978, 1986; Brown, 1989; Neilson *et al*, 1989).

It is the likely meaning of events and difficulties that is rated. In assessing, say, the threat of having a third child in an overcrowded flat, raters make a judgement of what most women in such circumstances would be likely to feel, by taking into account what is known of the woman's plans and purposes, as these are reflected in her biographical and current circumstances. By ignoring self-reports about responses to the event, sources of bias stemming from the respondent can be ruled out. The method guards equally against bias stemming from the investigator. Manuals that give strict definitions of which incidents can be counted as events, and directories giving extensive examples rated on the various scale-points, help prevent interviewers from allowing a knowledge of the respondent's symptoms or reported emotional responses to influence their ratings. Consensus meetings of other interviewers in the research team, who are blind to the subject's symptoms and reactions, provide a further check on investigator bias.

'Severity' of events is assessed in terms of both the immediate and the more long-term effects. Events rated severe on long-term contextual threat have proved so far to be of central aetiological importance for depression and anxiety (see Brown & Harris, 1978, chs 4, 5). Also, only a restricted class of difficulties, measured by much the same procedure as events, appear to be of importance for depression - these are termed 'major difficulties' (see Brown & Harris, 1978, chs 8, 9).

Only events recorded by the LEDS were considered for a 'positive' rating. The descriptive material used was that routinely obtained; no extra questions had been added to deal with positive events, because details concerning each event included potentially positive aspects.

For the present exercise we took the opportunity to reconsider an earlier rating scheme of positive dimensions developed for the study of recovery from depression (Brown *et al*, 1988). However, a number of the new scales were quite highly correlated, and the present report deals only with the six that proved of clear significance. These are 'fresh start', 'potential fresh start', 'delogjamming', 'relief', 'anchoring', and 'reroutinisation'. Some developmental work for the new scales was carried out on the Islington material; a further, final version was developed on a series of psychiatric patients. Following the LEDS, the ratings were *contextual* - that is, they were made in terms of what *most* women would be expected to feel about the event in its particular context. All ratings were made blind to clinical material.

Three further basic decisions were made:

(a) the rating was 'long-term', reflecting the situation 10–14 days after the event
(b) the ratings reflected the various positive aspects of the event, regardless of how it was brought about or the degree of threat involved; it was possible for an event to be rated as 'positive' despite being highly threatening in contextual terms

(c) ratings were made by at least two raters independently, and a consensus rating made by more than two when there was a disagreement – again blind to clinical outcome.

The three main positive dimensions (set out below) are: (1) fresh-start type, (2) anchoring, and (3) relief. Those involving new hope (1a–c, three types of 'fresh start') were seen as likely to reverse or ameliorate loss or deprivation, and those involving increased security (2a–b, two types of anchoring) to dissipate danger. The third dimension, relief, was seen as likely to reduce tension and to overlap with the two main dimensions. It must be borne in mind that the same event could be rated under more than one dimension.

The 'fresh start' rating of the original study was expanded to cover three distinct but related measures.

(1a) *Fresh start* describes a change in a situation which gives hope with a situation that had been rated 1–4 as an ongoing LEDS difficulty – or had been a deprivation not covered by such a rating (see discussion of relief for example of a difficulty rating of 4). In every instance the *subject* should be the direct focus of the event – an unemployed husband getting a new job would not justify a rating. An example of a deprivation would be the experience of a single mother who had been isolated at home with her two children and had been trying for some time to find suitable work and arrange care for her children. This would be sufficient to be judged a deprivation but not a difficulty rated 1–4. In order to control possible bias, 'deprivation' was considered present only if the subject's behaviour had shown evidence of this – for example, she had made some efforts to ameliorate the situation, that is, in the previous example, had made efforts to find a job and had made inquiries about a nursery place for her children. A rating of fresh start would be conferred on the event of such a woman getting a job. A woman who had left a job earlier to go on a tour and on returning took up a similar post elsewhere would not be considered to have a 'fresh start' because her choosing to take the tour indicated a lack of such deprivation. Fresh-start events typically involve an actual change in everyday behaviour – for example a woman getting a job after being unable to get one, or a move to a larger house to escape overcrowding. Quite rare *reconciliation* events involving renewal of contact with a key figure after an estrangement of at least six months (i.e. a difficulty or deprivation from loss of contact) were also included as fresh-start events.

(1b) *Potential fresh start* rates a situation that does not yet warrant a fresh-start rating, but that may later do so – for example, hearing *news* of an offer from the council for rehousing from overcrowded and unpleasant accommodation. Events involving no more than a decision to do something are included only if they involve some 'public' action or declaration – for example actually visiting a solicitor to arrange a divorce, not merely privately determining to do so. The rating is also made where a satisfactory outcome for a 'fresh start' is more than usually uncertain – for example, a single mother beginning to live with a man after only a brief acquaintance.

(1c) *Delogjamming* is rated where an event appears to clear the way for a future solution, or appears to have made such a solution more possible, but where a substantial difficulty is still left – for example agreeing to leave a job after a long history of harassment, but with no satisfactory alternative employment available.

In what follows, the fresh start, potential fresh start and delogjamming dimensions are combined and referred to as '*fresh-start type*' events.

The second broad class of positive event involves the notion of increased security.

(2a) *Anchoring*, the most important type, reflects a likely increase in security following increased regularity in and predictability of an activity or relationship. In practice most anchoring events among the Islington women concerned situations such as finalising a divorce or a separation, 'settling down' with a man, change in housing (e.g. from renting to owning accommodation) or a change in employment status (e.g. from unemployed to regular employment), although some were more idiosyncratic (e.g. a twice-divorced woman changing her name by deed poll to that of the man she was living with).

(2b) *Reroutinisation* is a related rating, which involves the subject returning to previous activities (e.g. becoming pregnant for a second time or returning to work after lengthy sick leave). This has been placed with anchoring, and both are referred to as *anchoring*.

(3) *Relief* is rated where the event might help to resolve a problem. The rating was designed to replace the complex difficulty-reduction measure of the earlier research and this is still its main purpose. These are events occurring to *others* close to the subject that reduce a LEDS difficulty of some relevance to the subject. Many are fresh-start-like events focused on the other person. Examples are a husband getting a job after his unemployment had led to serious financial difficulty, and a child who has been disruptive at school being transferred at the subject's request to another one – both resolving a LEDS difficulty rated 1–4. (LEDS difficulties are rated from 1 (very marked) to 6 (low); '4' is considered 'low moderate'. A typical example of a difficulty rated 4 would be living with husband in a privately rented house for 34 years. Although there is enough space the house is extremely damp and needs quite a lot of modernisation. The landlord refuses to do anything and has been trying to bribe them to leave.)

There are also two less common types of relief. (i) On occasions events occur to others that appear capable of significantly reducing tension for the subject, but for various reasons do not reduce a LEDS difficulty. This (rarely) may be because the overall difficulty, although reduced to some extent, is still rated on the same scale point in the LEDS' fairly broad bands. For example, a woman in very poor housing in a run down and 'violent' estate with five children still had a difficulty rated '3' after a daughter and a friend had moved out relieving the overcrowding. This change was judged nonetheless to be likely to reduce tension and so was given a rating of relief. On other occasions the background situation will not qualify for a LEDS difficulty rating of 1–4. For example, one woman's husband who had been a lorry driver and away from home for lengthy periods found a new, better-paid job, and the rating was made in the context of the marriage beginning to improve after a bad patch.

(ii) Events were also rated as relief if they focused on the *subject* and were likely to relieve tension despite the fact that the situation had not been reflected in a LEDS difficulty. This may be because the crisis is too recent (e.g. receiving good news about a biopsy for a lump in the breast after a crisis of three weeks was not included as a difficulty, since the minimum duration is four weeks). In other instances a long-term and obviously tense situation has not been felt to justify a contextual rating of 1–4 as a difficulty. For example, one 'career' woman who had married 'late' had very young children, and was keen to work. She could not use an intra-uterine device and, as most women would be, was 'terrified' of getting pregnant (a difficulty rating 5). The relief event was being sterilised, with her husband's agreement.

Inter-rater reliability for events and difficulties was satisfactory: kappa = 0.82 for the fresh-start type, 0.81 for anchoring type, 0.78 for relief events.

The nature of the anxiety conditions

Clinical information was collected for the 404 women for the year before first interview. Twenty-four per cent of the women (96/404) had a DSM-III-R diagnosis of anxiety disorder: 15% suffered panic disorder, agoraphobia, or GAD. This is much as expected, bearing in mind that inner-city mothers are a high-risk sample (Brown & Harris, 1992). The total length of the episode was established at the first interview: 81% of episodes had lasted at least one year and 65% at least two years (Table 1), most of the latter appearing to have lasted much longer. Only eight episodes had lasted for 20 weeks or less, and two of these lasted longer when the first follow-up year is considered.

Just over half of those with panic disorder, agoraphobia, GAD, or social phobia also suffered depression at some point in the year, but only 13% of those with mild agoraphobia or simple phobia ($P < 0.003$, d.f. = 14); overall, in 41% of the anxiety disorders there was concurrent depression in the year before first interview. This degree of comorbidity is expected (Maser & Cloniger, 1990). In the initial analysis this overlap is ignored. Ratings in terms of DSM-III-R anxiety and 'caseness' of depression were made independently of each other.

Anxiety and depressive states studied

Only women with an episode of anxiety or depression that had lasted at least 20 weeks were considered in the analyses. This period was chosen because an earlier analysis (Brown *et al*, 1988) had indicated that positive events played no role in improvement or recovery from depression for periods of less than this, and we wished to compare the two conditions.

Where there was a recovery or improvement the time before the date of this change was divided into 20-week periods, and the 20 weeks immediately before the clinical change called a *recovery/improvement* period. Ratings took account of whether the period was one of depression, anxiety, or both conditions. Where there had been no recovery or improvement the final interview date was taken and the time before this divided in the same way. Any time without anxiety or depression was ignored, as was any episode lasting less than 20 weeks. The basic analysis was carried out separately for depression and anxiety.

For those with depression, a positive event in the 20 weeks before recovery or improvement was compared with all 20-week periods of depression not involving recovery or improvement. A woman could be included a number of times in the comparison series of the 20-week periods (e.g. depression lasting 90 weeks would provide four 20-week periods). The same procedure was followed for those with anxiety.

Three women had a further recovery/improvement, representing only 3% of the total episodes of recovery/improvement. The three were included twice, giving six recovery/improvement periods.

A total of 92 women with DSM-III-R anxiety and 67 with a 'case' of depression were selected. Of these, 44 had *both* conditions in the three-year study period. We used material systematically only from the first follow-up period. Detailed information had been routinely transcribed only for those events rated 'severe' on threat for the other two study periods (i.e. the year before first interview and before second follow-up). However, in order to increase as far as possible instances of 'recovery' or 'improvement', some women were included where there had been such a clinical change and there had been good descriptive material recorded about events. Details of the final selection of women are given in Appendix 1. For the 92 with anxiety, 24 recovered and 9 improved (a total of 36%), and for the 67 with depression, 34 recovered and 15 improved (a total of 73%). (If only the first follow-up year is considered, the proportion recovering/improving for anxiety is 26% (23/89), and for depression 53% (31/59); the differences reflect the less frequent chronic course of depressive conditions (Brown & Harris, 1992).)

The clinical changes were generally stable. Of the 31 women with at least one recovery or improvement from

Table 1
DSM-III-R hierarchical diagnoses of anxiety for 404 Islington women for the year before the first interview

Hierarchical diagnosis	Duration of episode: % (*n*)			Depression[1] also present at some point in year: % (*n*)	
	More than 2 years	More than 1 year	Total		
Panic disorder or agoraphobia	61 (14)	82 (19)	24 (23)	61 (14/23)	56 (37/66)
Generalised anxiety disorder (GAD)	55 (21)	68 (26)	40 (38)	55 (21/38)	
Social phobia	80 (4)	100 (5)	5 (5)	40 (2/5)	
Mild agoraphobia	73 (8)	81 (9)	11 (11)	20 (2/11)	13 (4/30)
Simple phobias	79 (15)	100 (19)	20 (19)	11 (2/19)	
Totals	65 (62)	81 (78)	100 (96)	43 (41/96)	

1. 'Cases' only.

anxiety, only one developed a new condition after recovery – a 164-week episode of agoraphobia and panic disorder was followed by 34 weeks with no symptoms, which was followed by a 35-week episode of GAD which in turn resolved. Another developed a 'worse' condition after an 'improvement' (and later went on to 'recover'). The length of follow-up after a favourable change ranged from 12 to 169 weeks, with an average of 86 weeks, and with 85% of the follow-up periods lasting over one year. The 49 recovering or improving from at least one episode of depression were somewhat less stable, with five having one further episode and three having two further episodes with a similar length of follow-up to that for the anxiety conditions.

Results

In presenting results for anxiety, women who recovered or improved were combined since findings did not differ for the two outcome categories. Table 2 gives results for the various positive dimensions. (The fresh-start components in the 33 recovery/improvement periods for anxiety add to more than the overall fresh-start type, as women on occasions had more than one fresh-start component in the 20-week period.) All three basic types – that is, anchoring (including reroutinisation), relief, and the combined fresh-start type – were much more common before recovery/improvement than where there was no such change. If any type of event is considered (extreme right-hand column), 61% compared with 11% had at least one positive event, a ratio of 5.4 ($P<0.001$).

A similar procedure was employed for depression. Differences are again high for all positive types for the 49 women recovering or improving from depression for at least 20 weeks (Table 2). If any type of event is considered (extreme right-hand column), 57% compared with 10% had at least one event, a ratio of 6.0 ($P<0.001$).

The somewhat different patterning of the dimensions for the two conditions is broadly consistent with the specificity hypothesis: fresh-start type events (involving hope) are more important for depression, and anchoring type (involving security) more important for anxiety, with no differential prediction made about relief. However, a proper test requires a more complex procedure that takes account of the fact that the positive dimensions at times overlapped, and that eight women recovered or improved from anxiety and depression at the same time.

Specificity of effects

An event could at times be characterised both as fresh start and anchoring (e.g. marriage), and a rating of relief is consistent with a fresh-start or anchoring rating, although, in fact, the actual amount of overlap is modest (Table 3). Table 4, dealing with the specificity hypothesis, takes this overlap into account. In any test of this hypothesis it is also necessary to take into account that it was possible for a woman to recover or improve from both anxiety and depression. Since no prediction about specificity was made about relief, it is treated conservatively in what follows, and classed as non-positive.

Three predictions can be made: (a) those recovering or improving from pure depression will have either fresh start alone or fresh start and anchoring; (b) those with pure anxiety will have anchoring alone or anchoring with fresh start, and (c) those with a mixed condition will have *both* anchoring and fresh start. These predictions are broadly confirmed in Table 4. Recovery or improvement periods in pure anxiety had the highest proportion with anchoring alone, and in all 40% had some anchoring; such periods

Table 2
Percentage (no.) of women with anxiety by type of event in particular 20-week periods: (a) before recovery/improvements, and (b) 20-week periods for women not recovering/improving

	Anchoring	Relief	Fresh-start type	Fresh-start components			Any anchoring, relief or fresh-start type
				Fresh start	Potential fresh start	Delogjamming	
Anxiety analysis							
(a) Recovery/improvement periods (33 periods)	42.4% (14)	33.3% (11)	30.3% (10)	21.2% (7)	12.1% (4)	12.1% (4)	60.6% (20)
(b) Periods for women not recovering/improving (248 periods)	2.8% (7)	6.8% (17)	6.9% (17)	3.2% (8)	2.8% (7)	0.8% (2)	11.3% (28)
Ratio (a)/(b)	15.1	4.9	4.4	6.6	4.3	15.1	5.4
Significance: $P<$	0.001	0.001	0.001	0.001	0.05	0.001	0.001
Depression analysis							
(a) Recovery/improvement periods (49 periods)	26.5% (13)	32.7% (16)	51.0% (25)	28.6% (14)	18.4% (9)	12.2% (6)	57.1% (28)
(b) Other periods (105 periods)	3.8% (4)	1.9% (2)	5.7% (6)	1.9% (2)	2.9% (3)	1.0% (1)	9.5% (10)
Ratio (a)/(b)	7.0	17.2	8.9	15.1	6.3	12.2	6.0
Significance: $P<$	0.001	0.001	0.001	0.001	0.01	0.01	0.001

Table 3
The association (kappa) between the three dimensions using all events rated positive on at least one

	Fresh-start type	Anchoring type	Relief
Fresh-start type	1.00	0.41	0.31
Anchoring type	31/83	1.00	0.21
Relief	27/90	11/57	1.00

The fractions give the number of events rated on *both* dimensions (numerator) over the total with *either* dimension (denominator). Half the events (40/82) are rated on only one of the three dimensions.

in pure depression had the highest proportion with a fresh start alone, and in all 50% had a fresh-start event. Recovery or improvement periods from depression and anxiety in the same period had the highest proportion with both anchoring and fresh start. The proportions with such events among those 20-week periods not associated with recovery or improvement were uniformly low (fourth column).

In order to carry out a formal test of these predictions, a single hierarchical log-linear analysis was employed using a saturated model and four factors: (a) improvement/recovery in anxiety, (b) improvement/recovery in depression, (c) fresh start, and (d) anchoring. In examining the parameters for associations between variables, the critical predictions were confirmed (Table 5). Firstly, recovery/improvement in anxiety and presence of anchoring, and recovery/improvement in depression and fresh start have odds ratios of 5.75 and 9.87 respectively, controlling for the other factors. (See Appendix 2 for a note about the odds ratio as an index of association.) Secondly, neither anxiety and the presence of fresh start nor depression and anchoring (row 3), are significantly different from zero, with odds ratios of 0.91 and 0.90 respectively.

The analysis also confirms that there is a positive association between anchoring and fresh-start dimensions.

It is also possible to examine possible interactions between the factors. None proved to be significant.

Possible biases

In order to maximise the numbers in the analysis and obtain better estimates of rates we have allowed a certain amount of 'duplication' by taking 20-week periods rather than number of women; there is, we believe, no reason why this should have led to bias.

The approach in Table 4 is based on allowing women to have more than one improvement/recovery in the study period (in fact, only three did so), and the use of multiple 20-week periods for each woman to estimate base rates for positive events. We believe this is acceptable as in the two instances where the second episode was linked with a positive event the gap between the two 'recoveries' was 89 and 111 weeks respectively, and the events involved were quite unrelated. Furthermore, insofar as the presence of a positive event in a 20-week period might relate to an increased chance of one in an adjacent 20-week period (e.g. a potential fresh start in the first period being followed by an actual fresh start in following period), this would go against our hypothesis, in that it would tend to raise the rate of positive events in the comparison series.

The inclusion in the study of the 'extra' women who had a favourable clinical improvement outside the first follow-up period did not influence the basic findings – for example, for those in the anxiety series 67% (6/9) had a positive event compared with 58% (14/24) of the rest. The same held for the depression series.

In order to simplify the presentation of results, the comparison series uses only 20-week periods of either anxiety or depression. In fact we covered 20-week periods for 50 women without either condition at any point. Since the rates of the various positive events were similar (rates were, in fact, a little lower) we have not presented this material.

The issue of comorbidity is dealt with at length by Brown & Harris (1992). Depression and anxiety often overlapped in time (Table 1). The important point for the present set of results is that mixed conditions are unrelated to the processes considered. For 33% (11/33) of the women whose anxiety condition had recovered or improved there was a coexisting depressive condition that had lasted over 20 weeks. In most instances this depression changed favourably at the same time as the anxiety (8/11). However, the rate of 'positive' events preceding improvement or recovery from anxiety was not affected by whether or not depression was present – 64% (7/11) versus 59% (13/22) respectively. Essentially the same held for periods of recovery or improvement from depression – 62% (16/26) had a positive event when anxiety was present and 52% (12/23) when it was not.

Recovery/improvement and different diagnostic categories of DSM-III-R anxiety

All nine 'improvements' among the anxiety disorders occurred to women with panic disorder or agoraphobia.

Table 4
Percentage (no.) of 20-week periods registering recovery/improvement from DSM-III-R anxiety or case depression with a fresh-start type or anchoring event

Positive events	Depression alone	Depression and anxiety	Anxiety	None
Fresh start alone	28 (11)	13 (1)	8 (2)	4 (16)
Anchoring alone	0 (0)	0 (0)	28 (7)	2 (9)
Fresh start and anchoring	22 (9)	50 (4)	12 (3)	2 (11)
Non-positive (including relief)	51 (21)	38 (3)	52 (13)	92 (418)
Totals	100 (41)	100 (8)	100 (25)	100 (454)

Table 5
Hierarchical log-linear analysis using a saturated model for recovery/improvement in anxiety or depression and fresh start and anchoring dimensions

	Parameter	Z value	Odds ratio	P value
1	A × ANC	2.73	5.75	0.001
2	D × FS	3.57	9.87	0.001
3	D × ANC	−0.16	0.90	NS
4	A × FS	−0.15	0.91	NS
5	ANC × FS	4.28	15.50	0.001
6	A × D	0.84	1.71	NS
7	D × FS × ANC	−0.88	-	NS
8	A × FS × ANC	1.18	-	NS
9	A × D × ANC	0.31	-	NS
10	A × D × FS	0.61	-	NS
11	A × D × ANC × FS	0.77	-	NS

FS, Fresh start; ANC, anchoring; A, recovery/improvement in anxiety; D, recovery/improvement in depression.

Neither recovery nor improvement were common among those with simple phobia or mild agoraphobia - 14% (4/28) compared with 45% (29/64) for other anxiety conditions ($\chi^2 = 6.86$, 1 d.f. = 1, $P < 0.01$). Despite these differences, diagnosis was unrelated to whether or not there was a 'positive' event before any recovery or improvement.

Length of episode of anxiety

Length of episode of anxiety disorders was unrelated to outcome for the 86 women in an episode at the point of first interview who had been followed up for at least one year (most had been followed up for two years). Thirty per cent of the women (26/86) recovered or improved at some point. There was also no relationship between duration of episode and presence of a 'positive' event before recovery/improvement. Only eight women in the whole three years had an episode of 20 weeks or less (average 10.9 weeks), and all were excluded from the above analyses. (This decision was made before the analysis.) All recovered and none had a 'positive' event before this. It has already been established that positive events are rare before clinical improvement for depression of a similar length (Brown *et al*, 1988).

Discussion

The basic characteristics of the DSM-III-R anxiety disorders found among the Islington women are unsurprising. They were largely chronic conditions, often coexisting with episodic and circumscribed bouts of major depression, especially for panic disorder, agoraphobia, GAD, and social phobia. Some one in six of the women had one of these four conditions during the year before our first contact and, if the remaining phobic conditions are included, this ratio increases to one in four. It should be borne in mind that the women were almost certainly at high risk. They all had children at home, and lived in an inner-city area; a fifth were single mothers. These factors appear to raise rates of anxiety (Robins & Regier, 1991).

'Recovery' or 'improvement' from a DSM-III-R anxiety condition was quite common, although not as frequent as with depressive disorders. Using the hierarchy panic disorder, agoraphobia, GAD, social phobia, mild agoraphobia, and simple phobia, three in ten women with an anxiety condition at the first interview showed such a change during a follow-up which averaged about two years in length. Relapse was rare.

Although most anxiety conditions were chronic, 33 women did develop a new episode during the first two years of the study. Circumstances surrounding onset confirmed earlier research that severely threatening 'danger' events - such as learning of a husband's affair, or son's involvement with police - often provoked onset (Brown, 1992). This replicates the earlier finding concerning the role of provoking agents in anxiety (Finlay-Jones & Brown, 1981).

'Positive' events are involved in 'recovery' and 'improvement': 61% of the anxiety conditions had had a positive event characterised by anchoring, fresh start or relief in the prior 20 weeks. This proportion might be somewhat increased by the inclusion of other positive dimensions such as 'goal attainment' not used in this paper, but our impression is that it is unlikely that many more would be involved. We had already established that depressive episodes that had lasted some 20 weeks or more were similarly influenced by positive events (Brown *et al*, 1988). The figure reported in the present paper is similar to that for anxiety - 57% compared with 61%.

The present paper is the first attempt to extend the idea of specificity to the process of 'recovery' and 'improvement' rather than onset. The hypothesis tested was that a 'fresh start' is important for depression because it conveys hope in a situation of deprivation and loss, and that 'anchoring' in a place or role is important for anxiety because it conveys security in a situation of danger. Testing this hypothesis was difficult because the same event could convey both meanings - a mother living alone with money difficulties who returns to work after five years would experience a fresh start and be anchored in a new role. Also, anxiety and depression occasionally changed favourably at the same time.

However, it emerges that events preceding a change in depression were more often characterised as fresh-start type events, while those before a change in anxiety were more often on the anchoring dimension, and events before a change in both

conditions were characterised by fresh start *and* anchoring. This was true even after taking into account whether or not anxiety and depression changed in a favourable direction together. A log-linear analysis confirmed all four hypotheses predicted by the notion of specificity: odds ratios are large and significant for fresh start and depression, and for anchoring and anxiety, controlling for the other pair, but not different from zero for fresh start and anxiety or for anchoring and depression. This is despite the fact that fresh start and anchoring dimensions often occur together.

Given the specificity already established in terms of loss and danger in the onset of the two conditions, different aspects of meaning appeared to be involved in onset and course – and by implication different underlying elements in activity of the central nervous system.

Episodes of 20 weeks or less were excluded because no effect on depression had been found for conditions lasting less than about four months (Brown *et al*, 1988). Short episodes were uncommon among the anxiety disorders, but there was nothing to suggest that 'positive' events related to clinical change among them. It is possible in such instances that the actual danger involved in provoking onset dissipates fairly quickly. One woman developing a severe episode of panic disorder following the witnessing of a violent attack on her son by 'strangers' in the youth club which she and her husband ran, lost all symptoms after eight weeks – perhaps partly because the strangers had not been seen since. It is also possible that the provoking event itself paradoxically will play some part in clinical improvement by changing the crisis of which it is a part – a husband calling the police to prevent him violently attacking his wife might lead fairly quickly to reduced tension in the marriage.

It is necessary to end on a note of caution. The exercise has involved a considerable amount of reworking of data in terms of a blind re-rating of events. The basic material on anxiety has been re-rated in terms of DSM–III–R criteria and there was also at times some doubt about the exact dating of the clinical change. Throughout we have done our best to be conservative – for example, taking the earliest evidence of clinical change stands more chance of placing any 'positive' event which may have played a role after rather than before the relevant clinical change. However, it is impossible to rule out bias, and it is necessary for the work to be replicated. The role of danger events (rather than loss) in the onset of anxiety does appear to be reasonably secure, and the results concerning recovery and improvement in anxiety and depression probably represent a reasonable *prima facie* case for a significant effect of 'positive' events in general, leaving aside the issue of specificity.

There remains the possibility that some of the clinical changes were set in motion before the event and this brought about the event rather than the reverse. It may be useful to give a brief outline of the positive events that occurred before a favourable clinical change in anxiety. In about half the instances there is some suggestion that the event (or at least one of the events if more than one was present) was 'independent' in the sense of being not immediately the result of the subject's own behaviour. These included: violent neighbours moving (relief); husband gets job (relief); ex-cohabitee leaves her his share of a jointly owned house (anchoring); subject wins court case about her housing problem (delogjamming) and news of move to better house (potential fresh start, relief); subject moves to a new council flat (anchoring); daughter and friend move out of overcrowded flat (relief); violent husband sent to prison (delogjamming, anchoring, relief); severely handicapped grandchild dies after weeks of intensive hospital treatment (relief); 'violent' husband sent to prison (delogjamming, anchoring, relief). However, it is equally clear that the women themselves have played an important part in bringing about the other half of the events: subject starts a further education course (anchoring); subject's new job (anchoring); subject returns to work after physical illness (anchoring, reroutinisation); subject's second pregnancy (anchoring, reroutinisation); separation from husband (delogjamming) and boyfriend moving in (anchoring); move of house (anchoring) and subject's change of job (anchoring); move of house (relief) and new boyfriend (potential fresh start); rehoused (fresh start, anchoring) and later move to own private house (anchoring); subject gets job after going on a government training course (fresh start, anchoring); new boyfriend (possible fresh start); returning to relatives in England after being widowed and left isolated when abroad (fresh start, anchoring); move to own private house from rented accommodation (anchoring).

In the earlier analysis of recovery in depression evidence was presented that on balance the events were probably not brought about by the woman after her clinical change (Brown *et al*, 1988). Those leading to change in anxiety appear on balance to have been somewhat more under the woman's control and there must therefore remain the possibility that on occasions some clinical improvement may have occurred before the event, although we had collected no evidence that would suggest this. There are, of course, several possibilities. A modest change may have led to the woman bringing about the event and

this in turn led to a still greater clinical improvement. On occasions improvement in depression, rather than anxiety, may initially have led the women to act, and so on. It would be helpful to have a new study specifically focusing on this issue.

Appendix 1

Details of women with DSM-III-R anxiety and case depression selected for study

DSM-III-R anxiety

There were 99 women with DSM-III-R anxiety conditions in first follow-up:

- 8 were excluded because episode lasted less than 20 weeks
- 2 were excluded because recovery date was too uncertain
- 2 were counted twice who, after 'improving/recovering' in the first follow-up, relapsed and went on to 'recover' again in the second follow-up
- 1 was added who had a 'recovery' in year before first interview.

giving a total of 92.

Of the 33 'recovered' or 'improved', 8 did so in the second follow-up period and one in the year before the first interview.

Caseness of depression

There were 64 women with 'case' depression condition in the first follow-up:

- 14 were excluded because the episode lasted less than 20 weeks
- 1 was counted twice who, after 'improving/recovering' in the first follow-up, relapsed and went on to 'recover' in the second follow-up
- 12 were added who had a 'recovery' in the second follow-up and four in the year before the first interview.

giving a total of 67.

Of the 49 who 'recovered' or 'improved', 13 did so in the second follow-up and four in the year before the first interview.

Appendix 2

A note on odds ratios

An odds ratio gives the amount by which the likelihood of an event is affected by some prior state of affairs. Odds are just one way of expressing likelihood, and an odds ratio is just the ratio of the odds of an event given the prior state versus the odds without it. If we say that the odds of an event are 3 : 1, then this means that there is 75% chance of it occurring (versus a 25% chance of it not occurring). If the odds are 3 : 1 given a preceding event, A, and 2 : 1 without A, then A is associated with an increase in the odds by a factor of 3 over 2. The odds ratio is said to be 3/2 or 1.5. If the odds ratio is greater than 1 then the preceding event is associated with an increase in the likelihood of some event: if the odds ratio is less than 1 then the preceding event is associated with a decreased likelihood of an event. Most analyses of associations between categories of events (e.g. log-linear modelling) test the null hypothesis that the odds ratio is not different from 1.

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